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SOCIETY FOR SIMULATION IN EUROPE

Abstract Booklet

This year's Annual Meeting Abstracts

Thank you to the presenters and abstract submitters for attending and supporting the 28th Annual Meeting of the Society on 14th to 16th June 2023.

Our meeting took place face to face in Lisbon, Portugal at the Lisbon Congress Centre.





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"Escuela de Enseñantes" (Young Teachers Academy): an innovative faculty development intervention to train pre graduate students as teacher assistants.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

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Introduction: Background, Context and Aims

In 2015 the Universidad del Pacífico (Paraguay), got involved into an innovative project to promote a curriculum transformation in medicine: from a Flexnerian perspective to an integrative curriculum. Multiple interventions have been required to produce this transformation, including the active participation of pre graduate students (PS) as part of the curricular adjustment.

In order to promote the participation of PS, in 2018, we have created the "Escuela de Enseñantes" (EdE) (Young Teachers Academy) a faculty development program which offers extracurricular activities to the healthcare PS. Once they finish the EdE program, PS are assigned as new teacher assistants in different subjects, bringing the latest educational perspectives and methodologies: supporting senior teachers with the curriculum transformation process.

Methods

The EdE represents a 110 hours course (4ECTS) with a blended learning program, which covers the principles of education, competency-based curriculum, communication, reflective practice, critical thinking, and fundamentals in research. PS from 1st to 5th year may apply. The EdE includes the development of a final project, where PS design and execute a curriculum intervention to be implemented in the following academic period. By the end of the course a satisfaction survey is applied.

Results & Discussion

Results: 4 EdE cohorts have been carried out with a total of 80 PS participants. 66% of them replied to the satisfaction survey: 75%(n=40) are still in the degree program and 31%(n=12) are teacher assistants; while 25%(n=13) have already graduated; most of them are combining clinical practice with teaching.

The EdE has received a positive assessment (+4points Likert1-5) by 85%(n=46) of the graduates on methodology and teaching performance.

Regarding the curriculum: most of the subjects where a EdE graduate has been enrolled as teaching assistant has suffered a transformation in methodology. Senior teachers are more open to innovation.

Discussion: Despite EdE being positively valued by graduates, associate teachers and the organisation, the retention of assistant teachers after EdE has room to improve. PS obligations in healthcare sciences degrees require a significant time for education, clinical rotations and study (that usually increases year by year). This may be a barrier to PS to enrol as assistants or the reason why they resign to the role.

A mentoring program for EdE graduated participants is the novel improvement strategy developed to mitigate this

handicap;it includes a narrow follow up with a specific evaluation of the academic impact, retention and performance of new teacher assistants.

Keywords

Medical Education, Faculty development, Innovation, Students, Teaching Training

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
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360° Virtual Reality Videos in Pathology Education: The Holopath-VR Experience

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

Virtual reality (VR) is a relatively new technology that has significantly improved in recent years and provides individuals with an immersive experience, which may offer benefits in the field of medical education. The aim of this study was to assess undergraduate medical students' perceptions of VR pathology videos as well as to investigate potential side effects related to VR.

Methods

A cross-sectional study was conducted among 3rd, 4th, 5th, and 6th-year medical students. High resolution 360° format histology and cytology videos were created by scanning glass slides and editing them using Adobe Photoshop CC software (Adobe Systems, San Jose, CA, USA) and Sony Vegas 18.0 software (Sony Creative Software, Madison, WI), including audio and subtitle options. Students were questioned about their experience immediately after they watched HoloPathVR 4K 360° videos using an Oculus Quest 2 (Facebook Reality Labs) head mounted display (HMD) that had been uploaded on the YouTube VR platform (Figure 1). Furthermore, a modified version of the Simulator Sickness Questionnaire (SSQ) was used.

Results & Discussion

A total of 32 students participated in the study (8 from each year of studies, 20 female/12 male). All participants reported that the experience was interesting (4.84 out of 5), highly immersive (4.38 out of 5) and were receptive to the implementation of VR as a teaching tool (4.84 out of 5). Regarding VR-related symptoms, all were self-limited, and most were ocular in nature. The symptoms were mild and related to blurred vision (34%) or focusing problems (56%) and could be attributed to wearing an HMD for the first time, or poor fit. There was no significant difference in VR sickness experience between groups or genders.

Conclusions:

- Considering the positive reception expressed by the students, 360° virtual reality videos may represent an additional tool to teach pathology, despite the initial investment and costs.
- Secondary effects, which appear to be mild and self-limiting, do not represent an obstacle to implementing this

technology in this context.

- Additional in-depth and long-term studies are necessary to determine the effectiveness of this technology as a methodology for knowledge acquisition, in comparison to traditional methods.

Keywords

Pathology; Virtual Reality; Head Mounted Display; Education

References/Acknowledgements (Vancouver Citation style)

Psychometric evaluation of Simulator Sickness Questionnaire and its variants as a measure of cybersickness in consumer virtual environments. Appl Ergon. 2020 Jan;82:102958.

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A 10-year bibliometric analysis of Latin America and the Caribbean healthcare simulation studies: Focus on Top-10 production trends

Format: Research Studies - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

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Introduction: Background, Context and Aims

Healthcare simulation (HS) in Latin America and the Caribbean (LAC) has presented a growing development over the last 20 years. However, its facilitators remain focused on correctly applying the method without sufficient registration and budget to carry out research as an effective way of communicating knowledge (1, 2). Our aim was to describe the bibliometric indicators of LAC-HS studies between 2012-2021 to identify areas of opportunity.

Methods

We use Scival tool to collect the bibliometric data from the Scopus database. We carried out a systematic search with terms related to "Simulation training" to identify studies in HS of any design or language from 2012 to 2021 in LAC. We excluded articles not included in the theme "medicine".

Results & Discussion

We got 847 documents with 8620 citations (10.2 citations/document). Surgery was the most popular subcategory (n=231; 27.3%). In LAC countries, South American authors from Brazil (n=152) and Chile (n=56) published the most. However, Cuban and Jamaican publications have the highest impact, with 41.5 and 38 citations/document, respectively. In the rest of the world, most co-authors are from the USA (n=430). However, Swiss and Italian authors have the highest impact, with 23.8 and 23.6 citations/document, respectively (Table 1). "Universidade de São Paulo" has the highest scientific production (n=45; 5.3%) and the highest number of citations (n=400). The high concentration of LAC-simulation documents was published in Q1 journals (n=319; 37.7%). Most of the documents developed topics in "debriefing & clinical competence" (n=166), and "surgical skills" (n=157), with the greatest growth of 77.2% and 189%, respectively. Most documents have collaborations: only national (n=324; 38.3%), international (n=277; 32.8%) or only institutional (n=212; 25.1%). However, in terms of impact, international collaboration (12.4 citation/document) exceeds both national plus institutional collaborations (9.4 citation/document). USA is the country with the highest occurrence of co-authorships with countries with at least 5 published documents.

Keywords

Simulation Training; Bibliometrics; Latin America; Caribbean Region

References/Acknowledgements (Vancouver Citation style)

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A New Simulation Programme for a New Role: Developing the London IMT 3 Simulation Programme

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Therapeutic uses of Simulation

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Introduction: Background, Context and Aims

Core medical training (CMT) in the United Kingdom had to modernise, to enable physicians of the future to manage complex co-morbidities in an increasingly ageing population. This training overhaul means the new Internal Medicine Training (IMT) programme is 3 years in duration (CMT was previously 2) where the final year (IMT 3) involves working independently as the medical registrar as part of generic broad medical training, rather than the role given previously just at specialty training. A simulation programme has been in place for other levels of training, but previously had not formally been developed for this specific role. The aim of this project was to develop an innovative simulation programme to be used across London for this novel grade of physician, focusing mainly on the Capabilities in Practice (CiPs) of the national curriculum, but also taking into account the needs of trainees themselves. An interprofessional working group was created to collaborate and co-ordinate work between multiple stakeholders including trainees, simulation centres, IMT programme directors and multiple subspecialty leads across London.

Methods

To identify trainees' needs, a research questionnaire was disseminated to 67 Internal Medicine Trainees in 5 different hospitals across London - a mix of teaching and district general hospitals were included to ensure a broad range of responses. In addition, CiPs were identified from the national IMT curriculum with particular focus on domains requiring increased independence at critical progression points. These two aspects were then integrated to create 11 simulation scenarios. Numerous experienced subspecialty experts across London then reviewed the scenarios for accuracy. The end programme is broad in its scope, with some challenging inpatient and outpatient clinical scenarios, as well as scenarios that address discrimination in the workplace, to truly reflect the breadth of the curriculum, and the requirements of an emerging medical registrar.

Results & Discussion

Although simulation has been well established in physician training, the role of IMT 3 is novel and a formal dedicated simulation programme had not previously been developed in London. We offer this innovative package which has close curriculum mapping and incorporates perceived gap analyses by the trainees themselves. It has been made easily accessible to all IMT Training Programme Leads, with approval from Health Education England. Rollout commenced in August 2022 and so far the feedback has been excellent, though we will continue to modify and improve the scenarios as necessary, and further research is ongoing to assess the impact of such a programme.

Keywords

Simulation, Internal Medicine Training, IMT, London

References/Acknowledgements (Vancouver Citation style)

Acknowledgements: K. Jamieson, C. Sadler, L. Brock and LSN team, R. Gill, W. Ricketts and P. Lee (Barts NHS Trust), T. Tran and A. Bradley (Pallisim Network), HEE team, K. Price, B. Lindsey, L. Chandrarajan, S. Hwang, E. Radcliffe, J. Kotecha, J. Periselneris



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A Scoping Review: What is known about simulating ageing experiences for Healthcare Professional students and its impact on attitudes towards older patients.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Ageing simulation suits and equipment give Healthcare Professional (HCP) students the opportunity to experience what it might feel like to be an older person with a disability or illness associated with ageing. An ageing simulation experience where students have to complete Activities of Daily Living (ADL) tasks can highlight the challenges that an older person may face as they strive to maintain their independence. We undertook a scoping review with the aim of establishing from the evidence what is known about simulating ageing experiences for HCP students and its impact on attitudes towards older patients.

Methods

We applied Arksey and O'Malley's framework (1) to achieve relevant articles, which met the inclusion criteria for our scoping review question. Four databases (MEDLINE, Embase, Web of Science and Cumulative Index to Nursing and Allied Health Literature) were searched. This resulted in 114 citations. After screening these articles and applying our exclusion criteria, we had 14 articles selected for inclusion.

Results & Discussion

Of the 14 studies, 8 (57%) originated from the United States of America and seven (50%) used a mixed-methods model. Thirteen (93%) studies involved medical or nursing students from varying years of study. One (7%) study had HCP students from multiple disciplines plus multiple years of study. There were two types of simulation experience identified: workshop based and the use of an Ageing Game. Sensory impairments simulated included visual and hearing impairments, mobility issues and specific illnesses like Parkinson's disease, stroke and diabetic neuropathy. Managing medications, managing finances and functional ability were the most common ADL simulated. The majority of studies reported a positive impact on knowledge in geriatrics plus attitudes and empathy towards older people. Negative emotions were reported, most commonly frustration over the inability to do a normally easy task.

Teaching in geriatrics should be compulsory on all HCP undergraduate curricula and be a positive experience promoting successful ageing while raising awareness of ageism. As recognised trainers, we must attract and inspire HCP students into geriatrics as a future career. Future research should include interprofessional education, bringing HCP students together early as an undergraduate, throughout training and into postgraduate working to gain experience as part of collaborative Multidisciplinary Team working. The use of ageing simulation is an ideal teaching technique to facilitate this.

Keywords

Simulation training, health professional student, geriatrics.

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
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A didactic strategy for enhancing medical students' engagement in educational activities: Use of an Audience Response System (ARS) during the medical history taking training with Simulated Patients

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

Medical history taking is an important skill for medical students to master. Medical students usually practice this skill on patients after they have learned diagnostics and relevant theoretical information. Role-play activities with Simulated Patients (SPs) are used in order to improve undergraduate students' medical history-taking skills prior to their contact with a real patient. During this practice at the Clinical Skills and Simulation Center of the Aristotle University of Thessaloniki School of Medicine tutors often face the challenge of students' lack of engagement when only observation of the interaction between the acting students and the SPs takes place.

Methods

The simultaneous use of Mentimeter, an Audience Response System (ARS) with role-play activities during the medical history-taking training with SPs was tested in the undergraduate course "Introduction to Clinical Skills and Practice" in our medical school. Real-time students' responses to a wide range of questions contributed to the creation of an inclusive environment where every student could participate. Students initially watched a video of poor practice in medical history-taking and then watched the live performance of two fellow students practicing in medical history-taking with SPs. During each encounter they were asked to respond spontaneously to both closed and open-ended questions. The interactive questions allowed the students to engage in the first part of the session, interact with their tutors and form a more dialectic relationship in the second part of the educational activity which included debriefing after the interaction with the SP.

Results & Discussion

ARS systems, such as Mentimeter, can contribute to a dialogic approach in teaching medical history taking, while tutors can collect valuable information on students' perspectives, comprehension and content retention. Moreover, they can create a dynamic and agile learning environment shifting towards a more student-centered approach in learning basic principles in medical history-taking. Such systems require no additional equipment as students use devices they already have (smart phones, tablets or laptops) to take part in the learning activity. ARS systems may improve students'

understanding and retention especially during group educational activities which do not allow all students' simultaneous participation in clinical practice simulations, such as practicing in medical history-taking with SPs.

Keywords

N/A

References/Acknowledgements (Vancouver Citation style)

Hunsu Nathaniel J., Olusola O. Adesope and Dan James Bayly. A meta-analysis of the effects of audience response systems (clicker-based technologies) on cognition and affect. *Comput. Educ.* 94 (2016): 102-119



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A new software for remote or in person clinical cases discussion: strengthening clinical reasoning and fostering teacher-student relationship through simulation

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

During the Covid-19 pandemic, training and internships suffered mostly for the lock-down and medicine teachers and tutors had to find new solutions for remote teaching.

The available solutions for the simulation of clinical scenarios are single-player gamified software in which the scenario develops in predefined branched paths according to the user's actions, selected from a limited list of choices; the user's performance is evaluated as a score by the computer according to predefined goals. Although well suited for self-assessment, these solutions do not fit well in evidencing and evaluating the students' ability in clinical reasoning. Therefore, we developed a new software for clinical cases discussion focused on teaching and evaluating clinical methodology and critical thinking of the students.

Methods

The software can be used both in person or remotely, for lessons, exams and training and permits to interact with single students or groups. It is based on a database of clinical scenarios: each scenario has a collection of clinical data (patient history, clinical findings, medical reports, lab results, imaging) prepared by the teacher using an editor employing some clever automatism to ease the task of case creation.

In our software the case develops through human interaction as an oral discussion between teacher and student. The student asks any information he thinks relevant for the diagnosis and the teacher can reply showing clinical data (eg. a medical report) or engaging the student in a discussion about the adequacy of the request. Thanks to this interaction, the teacher can actively and freely guide the discussion both for teaching and assessment, evaluating the critical capacity and the diagnostic and therapeutic methodology of the student.

Results & Discussion

We tested the software with 80 students at the 5th year of medical school, during 24 lessons and 10 exam sessions, collecting both teachers' and students' feedback. The first experiences showed very positive results both in frontal lessons and exams: 96% of students consider the platform a useful instrument, 78% of them consider the software appropriate for assessment and 100% prefers lessons held using this software to traditional ones.

Although created to resolve the didactic problems of the pandemic period, the software has shown great potential for teaching and assessment even in presence. Our platform can evaluate clinical competences and not only medical knowledge. We believe that it keeps the teacher/student relationship alive and allows to guide and encourage the students in the development of a correct diagnostic method.

Keywords

Teaching, Clinical reasoning, Discussion

References/Acknowledgements (Vancouver Citation style)

None

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A new telesimulation model addressing the attitudinal and emotional precursors of interprofessional collaboration: Results from a pilot project

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

Interprofessional education (IPE) often focuses on learners' ability to communicate and work collaboratively. However, there are attitudinal and emotional components that precede interprofessional collaboration such as trust and empathy among other healthcare professionals. These two elements are often, but not openly accepted, the reason for non-collaborative relationships and interprofessional tensions. Yet, how to teach and train them is still under-researched and under-theorized. This paper presents the results of a pilot telesimulation IPE intervention aimed at promoting interprofessional role clarity between physicians and specialized nurse practitioner (SNP), while exposing learners to an IPE model that build upon interprofessional empathy and trustworthiness.

Methods

Thirteen 4-year medical students and students from the SNP program at the Université of Montréal participated in the pilot project. Two telesimulation scenarios were designed by a team of experts from the two professions. The scenarios presented a collaborative non-synchronic patient management plan between the two professions, which also put in evidence the enlarged and revised role of the SNP and its professional autonomy. While one group of professionals interacted with the patient, the other group of professionals was tasked to observe like someone who observes from a window. This is what we have denominated the "the IPE window model". In each scenario, students were triggered, by standardized patients, to clarify their own role and that of the other professional, who was not intervening. The two scenarios were followed by a common debriefing session led by instructors from the two professions.

Results & Discussion

A conceptual content analysis of the debriefing session revealed that the students' definition of their own role and that of the other professionals was marked by trustworthiness and empathetic traits elicited during the telesimulation. The two main subthemes under trustworthiness included credibility and reliability. The former was reflected in students' confidence in the different but complementary competencies that each other had. The simulation clarified and reinforced medical students' understanding that the SNP has the legitimate credentials to perform some of the acts that have usually been reserved for physicians and that are now shared with SNP. Reliability was counted when students' comments indicated that the simulation made them realize that the other professionals were to be trusted to do their work without supervision. Cognitive empathy encompassed the understanding of the other professionals' struggles generating trust in their work from the patients' perspectives. The opportunities and challenges of the "window observer model" for telesimulation IPE will be described in detail.

Keywords

Interprofessional education, telesimulation, trust, empathy

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

A novel model for faculty development and dissemination of simulation in healthcare education

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

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Introduction: Background, Context and Aims

Healthcare education globally faces challenges where simulation-based training might provide supplementary solutions. Two such challenges are:

1. Curriculum transformation, going from knowledge-based to competency-based curriculum (1, 2)
2. The need to educate more healthcare workers as WHO estimates a shortfall of 15 million healthcare workers globally by 2030 (3)

As a consequence of these and other challenges, there is a clear need for re-thinking healthcare education, including defining or updating strategies for faculty development, simulation implementation and efficient educational strategies. Simulation has been recognized to be highly valuable in teaching and learning in nursing and midwifery education with positive outcomes for both students and patients (4). The faculty for the midwifery master program at the University in Stavanger requested SAFER's help to increase student driven learning activities and increase the use of simulation-based training in the midwifery curriculum after a presentation of the SimBegin training program.

Methods

SimBegin is a faculty development program developed as a collaboration between SAFER simulation center and Laerdal Medical. It is a holistic training program comprising three levels. The Level 1 aims to give learners the skills of briefing a scenario, running a scripted scenario, and performing a standardized debriefing. Level 1 is an entry level course for beginners in simulation facilitation. The program also consists of a mentoring section for continuous development of facilitator skills (level 2), a pathway of how to become faculty and an implementation strategy (level 3). The following action points were planned for the midwifery master's program:

1. A pilot of a Level 1 course - September 2022
2. Evaluation through qualitative data collected through interviews of the midwifery faculty - Nov/Dec 2022
3. A faculty development program (Level 2 and 3) - May/June 2023

Results & Discussion

Preliminary results: Midwifery faculty members confirm that they experience the SimBegin Level 1 course to support learning processes and prepare the students for the clinical practice periods. They want to be trained to a Level 3 competency. The plan is to include SimBegin in the midwifery program curriculum in the first semester from 2023. Further results to be presented in the conference presentation.

The next step of the pilot is to test the hypothesis: SimBegin Level 3 training, will capacitate the teachers to train students at SimBegin level 1

Expected impact: If the hypothesis is confirmed, the SimBegin program will be an important contribution to solve the described challenges for healthcare education.

Keywords

Healthcare education, faculty development, SimBegin, midwifery faculty, simulation implementation

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

A simulation study on the use of intranasal glucagon for ambulatory management of severe hypoglycaemia in children with type 1 diabetes

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

Hypoglycaemia is the commonest acute complication of type 1 diabetes (T1DM), especially in younger age groups. Its management in home or ambulatory settings relies on glucagon, classically administered intramuscularly or subcutaneously. However, multistep reconstitution and injection can be complex and time-consuming, with a substantial risk of error and delays. Recently, intranasal (IN) glucagon, a needle-free, ready-to-use formulation has been approved for the acute management of severe hypoglycaemia in patients aged four years or older with T1DM. The dry synthetic glucagon powder is administered with a single-dose drug combination device, allowing simple, one-step, needle-free administration. Despite its ease of use, physicians must also be trained to use the device. Aim of the simulation study were (i) the propensity of paediatrics and emergency medicine residents to select different therapeutic options and (ii) the speed and administration success in a high-fidelity scenario of severe hypoglycaemia in a child with T1DM.

Methods

In this single-centre simulation study, 51 paediatrics or emergency medicine residents were exposed to a scenario of severe hypoglycaemia in a T1DM child (high-fidelity paediatric simulator, SimJunior, Laerdal, Wappingers Falls, NY, USA) in ambulatory setting. The same scenario was performed before and after a training session by an expert paediatric diabetologist on the recognition and treatment of severe hypoglycaemia, including a practical demonstration of the

preparation and use of both injectable and IN glucagon. The chosen therapeutic option among injectable glucagon, IN glucagon or glucose solution, time for drug delivery, and its effectiveness were collected. Scenarios were tape-recorded with participant consent and then analysed by three independent reviewers.

Results & Discussion

Before training, 45.1% of participants chose to administer injectable glucagon, 43.1% intravenous glucose solution, 5.9% intranasal (IN) glucagon, and 5.9% took no action. Administration was successful in 74% of injectable glucagon, 33.3% intravenous glucose solution, and 22.7% IN glucagon. After training, 58.8% of participants chose IN and 41.2% injectable glucagon, with 100% of successful administrations for IN glucagon and 90.5% for

injectable glucagon. Time to successful administration was shorter for IN than injectable glucagon (23■10 vs 38■7 seconds, $p<0.0001$).

IN glucagon is an easy and effective option for severe hypoglycaemia treatment, with an almost zero possibility of failure provided that adequate training is imparted.

Keywords

simulation study, glucagon, hypoglycaemia, children, type one diabetes

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SOCIETY FOR
SIMULATION IN EUROPE

A study to assess and compare prescription pattern and appropriateness of antimicrobial use in a rural government tertiary hospital in India (Uttar Pradesh).

Format: Research Studies - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

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Introduction: Background, Context and Aims

Antimicrobial resistance (AMR) is a major concern worldwide particularly in developing country like India because it is not only associated with high morbidity and mortality but also puts an enormous economic burden on its poor patient population and wastage of limited resources. Antimicrobial consumption in India has increased by about 103% between 2000 to 2015 making India biggest consumer of antimicrobials in the world and with this enormous increase in the use of antimicrobials, chances of emergence of antimicrobial resistance have also proportionally increased. In India, antimicrobials are being prescribed by not only Allopathic registered practitioners but also by those practicing AYUSH as well as unqualified medical practitioners making emergence of resistant strains more likely than ever.

Methods

The type of study is an Epidemiological Investigation. A prospective cross-sectional study which was conducted by the Department of Pharmacology and Therapeutics of Government Medical College (GMC), Jalaun (Orai). Purposive sampling method was used to decide the sample size. A total of 1000 prescriptions from the Outpatient Department (OPD) were reviewed. Prescriptions having at least one or more antimicrobials from OPD of Medicine, Surgery, Orthopaedics, Obstetrics & Gynaecology and Paediatrics departments were included. Databases were searched with the keyword combinations to perceive applicable articles.

Results & Discussion

Out of 1003 prescriptions which were analyzed from different OPD's of GMC, Jalaun (Orai) maximum number of antimicrobials were prescribed in Medicine (45.76%), followed by Surgery (27.72%), Paediatrics (14.26%), Gynaecology and Obstetrics (9.77%) and Orthopaedics (2.49%). Most of these antimicrobials were prescribed (56.33%) by MBBS (Interns/Non-PG JR's) followed by MD/Diploma (27.72%), MS (15.95%). Antimicrobials were prescribed most frequently for GI infections (25.75%) followed by URTI (15.60%), genitourinary infections (13.22%), fever (14.11%), Trauma (6.46%). Antimicrobials are becoming a staple in modern medicine which can produce catastrophic results in near future due to the emergence of AMR making treatment of previous sensitive microorganisms difficult resulting in increase in morbidity and mortality. There is little to no data available on antimicrobials consumption, appropriateness and cost of antimicrobials prescribed in the Indian community especially from the backward rural areas of India. Antimicrobial Stewardship (AMS) and National Adaptation Plans (NAP) guidelines should be enacted and followed strictly in all the hospitals across India and the antimicrobials prescription, consumption and dispensing should be strictly monitored as it will act as a check system. Awareness should be created among medical undergraduates through workshops,

presentations by collaborating faculties from pharmacology , microbiology, pediatrics etc. departments . It will decrease the irrational and inappropriate use of antimicrobials and chances of developing AMR.

Keywords

Antimicrobial Resistance, Appropriateness of antibiotics, utilisation of drugs, prescription pattern

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

A systematic review of tools for clinical debriefing: attributes, evidence for use and validity evidence

Format: Research Studies - Oral Presentations and Short Communications

Topic: Debriefing

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Introduction: Background, Context and Aims

Clinical debriefing (CD) is an emerging practice which has been found to confer benefits for staff performance and wellbeing, and has potential to improve systems and patient outcomes.(1) Use of a structured tool to facilitate CD may provide a more standardised approach and help overcome barriers, however, there is no current evidence to support one tool over another. This systematic review aimed to identify tools for CD in order to explore their attributes, evidence for use and validity evidence.

Methods

Ethical approval was waived by The University of Edinburgh Medical Education Research Ethics Committee. The project was prospectively registered on PROSPERO (CRD42021284839). A systematic review was conducted in line with PRISMA standards. Five databases were searched. Data were extracted using an electronic form, and analysed using critical qualitative synthesis. Attributes were explored using the 'five Es' framework (educated/experienced facilitator, environment, education, evaluation and emotions).(2) Evidence for use was explored using the modified Kirkpatrick's levels.(3) Validity evidence was explored according to the classic validity framework.(4) Quality assessment of each study was undertaken using the Medical Education Research Study Quality Instrument (MERSQI).(5)

Results & Discussion

Twenty-one studies were included in the systematic review. All the tools were designed for use in an acute care setting. Criteria for debriefing were related to major or adverse clinical events or upon staff request. Most tools contained guidance on facilitator role, physical environment and made suggestions relating to psychological safety. All tools addressed points for education and evaluation, although few described a process for implementing change. Staff emotions were variably addressed. Two thirds of studies reported evidence for use, however, this was generally low-level, with only one study demonstrating improved patient outcomes. Validity evidence was generally lacking. Recommendations for practice based on the findings are shown in the table. Future research should aim to further examine outcomes and validity evidence of these tools in order to enable confident implementation of CD tools and optimise their potential for individuals, teams, healthcare systems and patients.

Keywords

Clinical debriefing, Adverse events, Staff wellbeing

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SOCIETY FOR
SIMULATION IN EUROPE

A thematic analysis of the educational value of live tissue training for surgical learners

Format: Research Studies - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

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Introduction: Background, Context and Aims

Live anaesthetised animals are used as simulation models, for medical professionals to learn trauma surgical techniques. The benefit of this specific practice is unclear, in terms of educational outcomes for learners or improved health outcomes for patients. Despite clear ethical implications, advocates assert there is no suitable alternative to replace “live tissue training” (LTT).

This research aimed to explore how LTT is being used to educate medical professionals and understand the value of this training for surgical learners.

Methods

A systematic review was performed according to PRISMA guidelines; extracted data was used to answer the broad questions of who and what is being trained using this modality. Focus groups of (military) medical personnel were used as a secondary data source to explore learner perspectives of LTT and contribute to increased validity of results. Reflexive thematic analysis was used to identify patterns across the published literature and focus group transcripts.

Results & Discussion

The literature review demonstrated two different learner populations utilising this training: individuals (commonly military medics) providing ‘ATLS’ interventions in the pre-hospital setting, and surgeons, of various specialties, alongside other healthcare professionals practicing complex ‘damage control surgery’ in a team setting. The training onus is primarily psychomotor surgical skills, followed by application of clinical knowledge and reasoning.

Thematic analysis indicated that the critical and dynamic nature of haemorrhage, a realistic environment, and an invoked emotional response to training may influence learner perception of self-efficacy. This is mostly applicable to both learner populations, however data from focus groups indicated value of LTT is attributed differently by these groups in the military setting. For both, the training is valuable to practice ‘unfamiliar’ skills. For the pre-hospital practitioners (medics and physicians) the benefit is in doing so with appropriate tactile feedback at an individual learner level, whereas for military secondary care physicians, who have an equivalent clinical practice in a civilian setting, the significance is in rehearsing the application of clinical knowledge and skills within the team environment.

The educational value of LTT appears to be context-specific and may have a unique impact on learner psychology. Understanding how learners value this training is beneficial when considering how trauma simulation training can be rationalised and refined, especially for the development and use of alternative technologies to replace live animals.

Keywords

Surgery

References/Acknowledgements (Vancouver Citation style)

N/A



SOCIETY FOR
SIMULATION IN EUROPE

A training program to improve Technical and Non-Technical Skills based on High-fidelity Simulation in Emergency Medicine

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

Emergency Departments are high-risk settings where doctors have to manage critically ill patients in short time, in multiprofessional team.

In these stressful situations, the correct application of Crisis Resource Management (CRM) principles can reduce failures in teamwork and improve patients' safety.

The aim of this study was to evaluate the effectiveness of a training program with high-fidelity simulation (HFS) to improve Technical (TS) and Non-Technical skills (NTS) of residents in Emergency Medicine.

Methods

We realized a training program for the approach and management of the critical patient based on High-Fidelity Simulation (HFS).

The program included six sessions, which included 3 scenarios about the management of critical patients in High-Dependency Unit. Before the first session, participants received a general introduction about the Error in Medicine and the role of non-technical skills. Thereafter, before the following sessions, they received a specific training about: the ABCDE (Airway, Breathing, Circulation, Disability, Exposure) approach in the second session, Leadership in the third one, Communication in the fourth one and Situation Awareness in the fifth one, by means of a brief lesson and a dedicated activity. No specific training was performed before the sixth session.

We repeated the training program three times, with 10 to 12 participants for each program.

Three trained observers rated TS and NTS at the end of each scenario. TS were measured as the percentage of critical actions correctly performed by participants during primary examination. NTS were rated by means of Leadership Behavior Description (LBDQ), Emergency Care Practitioner (ECP) and Clinical Teamwork Scale (CTS).

Results & Discussion

We examined 54 scenarios, nine scenarios per session (three scenarios repeated three times). Percentage of correctly performed actions during ABCDE assessment, as well as LBDQ, ECP and CTS scores increased significantly from the first to the sixth session (Figure 1, comparisons performed by McNemar non-parametric test).

High-Fidelity Simulation confirmed to be an effective instrument to improve TS and NTS among Emergency Medicine residents. These results support the value of HFS as a tool to develop a correct method to approach the critical patient.

Figure 1: Trends of the ABCDE score and LBDQ, ECP and CTS scores.

Keywords

Emergency Medicine

References/Acknowledgements (Vancouver Citation style)

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A white-box model for real-time simulation of acid-base balance in blood plasma

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

A previously presented explanatory model in neonatal intensive care [1] uses total carbon dioxide content $[CO_2]_{\Sigma}$ in its respiratory gas transport model. The acid-base variables: partial pressure of carbon dioxide pCO_2 , pH, and bicarbonate ion concentration $[HCO_3^-]$ are required as inputs to other models, and as blood gas outputs. The application requires a transparent and efficient model. Such a model would also be more generally applicable in pediatric and adult educational simulation.

Methods

The Stewart model for the acid-base balance in blood plasma is explicitly based on physical and chemical principles [2]. It takes into account weak acids, such as albumin and phosphate and computes the apparent strong ion difference:

$$SID_{app} = [Na^+] + [K^+] + 2[Ca^{2+}] + 2[Mg^{2+}] - [Cl^-] - [La^-]$$

with sodium, potassium, calcium, magnesium, chloride, and lactic acid ion concentrations, respectively. An inventive code procedure allows for efficient computation of a pH value that annuls the charge resulting from strong ions and from acids and bases. A concentration of unmeasured anions U^- is also taken into account. The other dependent values are computed as part of this process.

Results & Discussion

Simulation results at baseline and for two disturbances of the acid-base balance are listed in Table 1, see below.

Respiratory acidosis can be caused by hypoventilation and is associated with high pCO_2 . Hyperchloremia, which can be caused by excessive administration of chloride containing fluids, is one of the clinical conditions that is associated with a decreased SID_{app} , resulting in metabolic acidosis. The model code accurately simulates these and other clinically and educationally relevant conditions in real-time.

Keywords

acid-base balance, model, real-time.

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SOCIETY FOR
SIMULATION IN EUROPE

ARE NEW STRATEGIES NEEDED TO TEACH SCHOOLCHILDREN THE RECOVERY POSITION?

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

The statement “Kids Save Lives”, from the European Resuscitation Council, advocates for the inclusion of basic life support techniques in schools. However, little scientific evidence addresses the issue of recovery position. The aim of this study was to compare the efficacy of sequential learning versus general learning while teaching skills to place the victim in the recovery position after recouping from a cardiac arrest.

Methods

A study with a quasi-experimental simulation design was carried out with youth between 10 and 14 years old. The study was accomplished in 4 phases: the first phase was to provide information to the schools and parents; the second phase consisted in training the physical education teachers (2 hours by an accredited nurse); the third phase was made up by student training (2 hours of practical training instructed by their physical education teachers); and the fourth phase, which is the final one, involves an evaluation by simulated scenarios (evaluated with a checklist by trained health professionals). To train the schoolchildren, they were randomly divided into two types of teaching techniques: one group received a Sequential Learning (SL), which consisted of receiving the training in an adapted way for their age, and the other group, called General Learning (GL), received all the information on first aid at once.

Results & Discussion

A total of 342 participants were part of the SL group and a total of 382 were part of the GL group. No significant differences were found between groups regarding the demographic variables ($p>0.05$). In relation to the simulation scenario variables, a higher percentage of SL students placed the victim in a lateral recumbent position compared to GL students (97% vs 79%; $p<0.001$; $ES=0.26$). On the other hand, a higher percentage of SL participants placed the victim in the recovery position compared to GL ones (46% vs 33%; $p<0.001$; $ES=0.14$). Furthermore, when assessing the rest of the variables on the total number of participants who placed the victim in the recovery position, no differences were found between the groups (moving the victim without difficulty, performing the head tilt-chin lift maneuver, placing the victim in a stable position and perform all steps in the correct order). According to all above mentioned, the results suggest that a sequential strategy of passing on information is more effective than a general technique, in view of the fact that it is likely to be more adapted to the cognitive needs of the students. Nevertheless, it is necessary to increase the quantity and quality of evidence in relation to the youth teaching strategies in the placement of the recovery position, while finding efficient strategies to succeed in their training as well.

Keywords

Competency-Based Education, Learning; Basic Life support; Recovery Position; Schoolchildren

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SOCIETY FOR
SIMULATION IN EUROPE

Addressing our Blindspots: Medical students' experiences of Simulation-Based Education to support their recognition of implicit bias

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

The GMC's 'Outcomes for Graduates' states that newly qualified doctors should recognise and manage their own Implicit Biases (1). Implicit bias (IB) refers to attitudes unconsciously affecting our understanding, actions, and decisions (2).

Implicit Bias Recognition and Management (IBRM) strategies have included using online tests, lectures/workshops, and more recently Simulation-based education (SBE) (2). Literature suggests that SBE offers a unique approach to allow learners to recognise their own IB however more evidence is needed around SBE's use in IB with medical students (3).

This study aimed to explore medical students' experiences of an SBE session on recognition of IB and to see if the SBE session could facilitate transformative learning around IB. Insight from this could help inform how to best to utilise SBE in education around IB and how to integrate this into medical curricula.

Methods

This study involved interviews with volunteer fourth- and fifth-year medical students from the University of Aberdeen (UoA) who were recruited to undertake a SBE session and a post SBE interview.

A simulated ward round scenario was designed around a series of events which would expose learners to escalating IB triggers. The students' experience of this and their recognition IB were explored through a debrief.

Following the SBE, participants were invited to attend a semi-structured interview on MS Teams where they were asked questions about their views, experiences and learning around IB.

The interviews were transcribed verbatim and transcripts were coded and analysed thematically. Ethical approval was granted by UoA Ethics Review Board (SERB/2021/12/2236).

Results & Discussion

Four themes have been identified from preliminary analysis (n=5) which are outlined in table 1.

Findings suggest that the experience of the SBE validated participants' own experiences of IB. Participants discussed the way that the SBE raised their awareness of IB and discussed the professional expectations of doctors to be unbiased. Finally, participants identified the challenges they felt when confronting and dealing with micro-aggressions.

This study set out to explore medical students' experiences of a SBE around IB and whether this led to transformative learning around IB. Findings suggest that the SBE activity increased medical students' recognition of IB in the workplace. This study is on-going and further interviews are planned. The findings are important to inform planning of curricula to ensure graduates are meeting the standards set out in the 'Outcomes for Graduates'.

Keywords

Implicit Bias, Microaggressions, EDI, SBE

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Advancing immersive virtual reality-based simulation practices: Developing an evidence-based and theory-driven pedagogical framework for VR-based simulations of non-technical skills among healthcare professionals

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

Skills like communication, relational competence, stress management, and effective collaboration with other colleagues, also known as non-technical skills (NTS) are paramount for health care professionals. Virtual Reality (VR)-based simulation is emerging as an innovative tool for the training and education of healthcare professionals. For instance, VR-based Simulation Inland Norway (VR-SIMI) is a method developed by the Simulation Centre of Innlandet Hospital to train NTS among healthcare professionals, as a supplement to medical simulation. However, in current methods, theoretical perspectives and educational principles prove to lack specificity, especially concerning the use of VR technology as a pedagogical instrument. This study explores how VR-SIMI can be effectively integrated according to sound pedagogical approaches.

Methods

An observational field study involved two groups of a total of eleven healthcare professionals (nurses, social workers, social educators, psychiatrists, and psychologists) in mental health services for children and adolescents, who attended four VR-SIMI sessions each over one year. Data were collected through field notes during active participation in the VR-SIMI sessions and informal conversations with the participants. Notes from field conversations and observations were recorded and transcribed following each session in a field diary. Data were abductive analyzed using directed content analysis, informed by the established practice of VR-SIMI, simulation, and adult learning theories, like Jeffries Simulation Theory, Kolb's Experiential Learning Theory, and Knowles' Andragogy.

Results & Discussion

The findings indicate that the participants positively evaluated using VR-SIMI as part of their daily work and for learning NTS. The participants also saw it as a valuable method for achieving better collaborative learning across occupational groups. Challenges with attendance related to COVID-19 occurred; despite these challenges, training sessions were successfully carried out as planned, even with few participants. However, the participants reported that the implementation and learning outcomes should be further refined to achieve greater learning outcomes. Based on these

findings, an evidence-based and theory-driven pedagogical framework is proposed to guide and enhance the quality of VR-based simulations of non-technical skills for a variety of healthcare professionals, as well as inform future research (Figure 1).

Keywords

Virtual Reality, VR- based Simulation, Non-technical skills, Health Care Professionals, training and education

References/Acknowledgements (Vancouver Citation style)

The authors thank SIM Innlandet Hospital and all the participants in the study. Special thanks to Johnny Sandaker, who has shared his knowledge and experiences of VR-SIMI.

Reference:

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SOCIETY FOR
SIMULATION IN EUROPE

An Interprofessional Peer Teacher Training program for health professional students: ‘face to face’ versus ‘online only’.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

The Peer Teacher Training (PTT) program consists of seven modules, designed to provide senior health professional students with opportunities to develop skills in teamwork, communication, teaching, assessment and feedback, in preparation for peer assisted learning activities and future practice. This study sought to compare ‘blended learning’ with ‘online-only’ delivery, and consider resource implications.

Methods

In early 2020, the PTT program was delivered in traditional ‘blended learning’ format (online and face-to-face). Students attended a one-day face-to-face session, with 9 facilitators, where students participated in small group learning activities, and were formatively assessed on teaching and feedback skills. Following the disruption of COVID-19, the program was redesigned to be delivered completely online across three weeks, using asynchronous synchronous activities, involving 12 facilitators. Students completed a post-course questionnaire, and data were analysed using descriptive statistics and thematic analysis.

Results & Discussion

In total, 85 students completed the program; 36 in ‘blended learning’ and 49 ‘online only’ format, from six disciplines: health sciences (27, 32%), medicine (22, 26%), nursing (19, 22%), pharmacy (11, 13%), oral health (5, 6%), and public health (1, 1%). 100% ‘blended learning’ and 73% ‘online only’ participants completed the questionnaire. Although differences in students’ experience of each format is evident, both were well received. Positive aspects included the online reading, discussion boards, and videos, with opportunities to practice teaching skills and receive feedback. Students valued the interprofessional context, reporting increased understanding of the roles of other disciplines. ‘Blended learning’ participants suggested reducing the face-to-face session. ‘Online-only’ participants suggested

additional synchronous activities, and fewer discussion boards.

In its online format, the PTT program continued to provide an excellent framework for health professional students to develop their teaching skills in an interprofessional context. However the 'blended learning' format of delivery was received more positively, and resource requirements were comparable to online only delivery. While an 'online-only' Peer Teacher Training program provides an effective alternative to traditional 'blended learning' format, adequate synchronous activity is needed to enhance student engagement.

Keywords

Peer Teacher Training, interprofessional, teaching skills

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Applying the high-performance team concept of Advanced Cardiovascular Life Support (ACLS) for the simulation-based team training of medical school students

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Our medical school has been providing team-based Advanced Cardiovascular Life Support (ACLS) simulation training for undergraduate (UG) medical students for several years. While the assessment of team performance in the American Heart Association's (AHA) ACLS has conventionally focused on evaluating individual communication skills and leadership performances, a new lesson style's evaluation methods have recently attempted the measurement of the entire team's communication and performance. Simulation lessons for UG students were designed and conducted using the AHA ACLS core concepts, such as quality basic life support (BLS), high-performance team, and team assessment in the school year 2022. Evaluation of the new ACLS simulation lesson would be discussed in detail.

Methods

Each medical students' group repeatedly practiced through simulations of cardiac arrest scenarios to confirm that their individual performance had reached a passing level or higher. Individual leadership and closed-loop communication skills were specifically assessed in the practice sessions. Debriefing was performed after each ACLS simulation. Following the practice session, a group simulation was conducted to evaluate group work as a final assessment session. The evaluation, similar to the AHA course, involved a procedural assessment using a checklist, an assessment of communication skills, a chest compression fraction (CCF) of 80% or more, and a pass grade of 80% or more. A questionnaire survey was conducted before and after class. All groups passed the team performance test with a favourable CCF score. Significant improvement was shown in understanding the importance of a high-performance team, team dynamics, and communication within the team.

Results & Discussion

As ACLS training is algorithm-based, the best performance of team communication has been expressed as an accurate representation of the scenario script. In addition, it has been discussed that this style of assessment may not be adequate. According to the drastic changes in the ACLS course, we modified our lesson protocol. Emphasis on the concept of a high-performance team in the goals-based team training was attempted in the simulation lessons for medical school students. The assessment protocol has been revised this year. Not only individual assessment but also a team evaluation has been attempted and performed. The individual assessment was completed in the practice session as a formative assessment, and the team assessment was conducted in a final team test as a summative one. These two steps effectively enhanced the medical school students' understanding of the ACLS team dynamics.

Keywords

Advanced Cardiovascular Life Support (ACLS), the assessment of team performance, communication within the team

References/Acknowledgements (Vancouver Citation style)

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- 2) Advanced Cardiovascular Life Support Instructor Manual, 2020 American Heart Association



SOCIETY FOR
SIMULATION IN EUROPE

Assessing students' perception and sense of safety during simulated activities after COVID-19 restrictions in an undergraduate medical education program

Format: Research Studies - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

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Introduction: Background, Context and Aims

COVID-19 pandemic had worldwide reduced personal interactions to a minimum¹. Also medical simulation activities had been negatively affected². In the Simulation Center of the University of Genova, Italy we reduced the size of groups and the amount of hours for activities. The aim of our study is to assess how the need of social distancing and the use of personal protective equipment had influenced both the effectiveness of simulated activities and its perception by the trainees, in the framework of undergraduate education.

Methods

We designed a survey for medical students who underwent medical simulation activities after the COVID-19 lockdown in our academic simulation centre. We used validated instruments to assess: (i) the effectiveness and perception of simulated education and the use of simulators (Utaut Scale³); (ii) the sense of safety in performing group activities related to the current pandemic period (Coronavirus Anxiety Scale⁴). All the scales were built using a 5-points Likert construct. Written informed consent was gained from all of participants, all the data have been collected in anonymous form.

Results & Discussion

The questionnaire has been sent to 775 students. We collected responses from 281 subjects (age, mean \pm STD: 25 \pm 4 years, 70% women). Students agree that using simulators is useful and beneficial for performance improvement (median 5 [1 5] with ~10% of the student disagreeing). Specifically, even though they appreciated using simulators (median 5 range [1 5], less than 5% of responses lower than 3), and would use simulators again (median 5 range [1 5], less than 5% of responses lower than 3), half of them is not planning to use them in the future (median: 3 range [1 5] ~50% of responses lower than 3).

Considering the COVID-19-related sense of safety, participants seem not to be negatively affected, as they do not report any discomfort (median of: 1, range [1 3], with less than 10% of the responses reporting values greater than 5).

The restrictions seemed not to have negatively affected the students' sense of safety thanks to the adoption of protective

measures. The simulated activities proposed have proven to be effective and satisfactory. In addition, a proportion of surveyed students is not planning to use simulation again, even though they appreciated and enjoyed its use. In the future, we are planning to perform more studies to better understand whether the changes adopted due to the COVID-19 regulations have affected the learning outcome and self-perception of medical students.

Keywords

COVID-19, Undergraduate Simulation, Safety

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SOCIETY FOR
SIMULATION IN EUROPE

Assessment of procedural skills in Chest Tube Insertion on a porcine rib model

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

Assessments need to have sufficient validity evidence established prior to their use. The ACTION tool evaluates proficiency in Chest Tube Insertion (CTI) and combines a rating scale and an error checklist. The aim of this study was to collect validity evidence for the ACTION tool on a porcine rib model according to Messick's framework.

Methods

A European panel consisting of surgeons, pulmonologists and emergency physicians were recruited in a structured Delphi-process. Twenty-nine of these experts participated in three consecutive rounds to develop the ACTION tool, consisting of a rating scale with 17 steps, and a checklist with 16 errors (ensuring validity evidence for content). We designed a rib model, consisting of a porcine hemithorax that was placed in a wooden frame. Novice and experienced participants were recruited from the departments of surgery, pulmonology and emergency medicine. After familiarization with the rib model and the provided equipment, identical instructions and clinical context were provided to each participant. They performed two CTIs while being scored with the ACTION tool. Their performances were assessed live by one rater and by three blinded raters using video recordings. Inter-item, inter-rater and test-retest reliability of the assessment were calculated, and a Generalizability-analysis was performed. Mean scores of both groups on the first performance were compared and a pass/fail score was established using the contrasting groups' method. Participants' motivation was measured with a 22-item intrinsic motivation inventory.

Results & Discussion

Nine novices and nine experienced participants joined this study. The assessment showed good inter-item reliability for scores (Cronbach's $\alpha=0.81$) and moderate for observed errors ($\alpha=0.55$). Inter-rater reliability (Pearson's $r=0.93$ and 0.83) and test-retest reliability ($\alpha=0.90$ and 0.85) were high for both metrics. Generalizability-coefficients were high for the rating scale (0.92) and the error checklist (0.86). In the first CTI, novices scored lower ($38.11/68$ vs. $47.78/68$, $p=0.023$) and committed more errors (2.44 vs. 1.11 , $p=0.044$) than the experienced group. A pass/fail score of minimum $44/68$ and a maximum of two errors was established. Both novice and experienced participants reported a high motivation and perceived choice.

A solid validity argument for the ACTION tool used with a porcine rib simulator has been obtained. This allows training sessions for CTI to be conducted as mastery learning where all trainees receive structured feedback and must pass an objective and reliable test of procedural skills prior to patient contact.

Keywords

validity evidence – assessment tool – Chest Tube Insertion – simulator model – mastery learning

References/Acknowledgements (Vancouver Citation style)

The authors would like to thank Amber Lievens and Najade De Pauw for their help in performing this study.

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SOCIETY FOR
SIMULATION IN EUROPE

Assessment of the level of stress in nursing students during the diploma examination - preliminary results

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

Exposure to acute stress and anxiety, which is a part of taking an exam, may have a negative impact on a student's performance during examination. The anxiety experienced as a consequence of autonomous system activation can undermine cognitive resources and affect the process of managing information. The study aim was to assess the level of stress experienced by nursing students during their final practical exams.

Methods

This research was conducted on a group of 38 nursing students. The tools used included State-Trait Anxiety Inventory (STAI X-1) created by Spielberger and the Perceived Stress Scale (PSS-10) developed by Cohen and Kamarck. STAI X-1 results are presented in percentiles from 0 to 100, with 100 marking the highest level of anxiety. PSS 10 results are presented as sten scores, with scores 1 to 4 representing a low level of anxiety, 5 to 6 – moderate level of anxiety and 7 to 10 – high level of anxiety. Before the examination, students' vital signs were measured and blood samples taken to determine cortisol level.

Results & Discussion

The level of stress according to STAI X-1 ranged from 13 to 100, with the mean and median at 86.56 (SD±19.45) and 96.00 respectively (Tab. I). PSS 10 results ranged from 4 to 9, with the mean and median at 6.84 (SD±1.67) and 7 respectively. 18.42% of students in the studied group obtained a score ranging from 1 to 4. A moderate level of stress, represented by a score ranging from 5 to 6 stens, was observed in 15.79% of respondents. A high level of stress (7-10 stens) was observed in 65.79% of respondents. Cortisol level ranged from 7.63 to 52.77, with the mean and median at 22.32 (SD±11.82) and 19.89 respectively. Above-average level of cortisol was found in 36.84% of students. HR ranged from 65 to 137/min., with the mean and median at 103.42 (SD±16.76) and 106 respectively. Systolic pressure was between 113 to 156 mmHg, with the mean and median at 134.24 (SD±12.91) and 134.5 respectively. Differences in cortisol level between stress levels according to STAI X-1 were statistically insignificant ($p=0.312$).

Nursing students present high level of stress in cardiovascular parameters, laboratory tests, and in psychological tests, during the practical examination. Identifying the susceptibility to stress with the use of psychological questionnaires allows educators to identify individuals who may require psychoeducational activities. Implementation of such a procedure can help to optimize the learning process, increase student satisfaction and appreciation for the institution providing the program.

Keywords

nursing, stress, simulation, OSCE, examination, student

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Breast Feeding Complications: Simulation Workshop for Maternity Nurses

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

In preparation for the international breastfeeding week, Soroka Medical Centre, the hospital with the largest maternity division in Israel which oversees over 17,000 births every year, organized a workshop for nurses who work in the five maternity departments of the hospital. These nurses regularly instruct women in the 3 days after giving birth on breastfeeding advantages and proper breastfeeding techniques. The divisions' nurse educators developed a simulation training workshop centered around breastfeeding complications that these nurses encounter regularly. The primary goal of the workshop was to provide these nurses with valuable experience and clinical skills which would result in better quality of care and experience.

Methods

5 simulation scenarios, each of which is centered around a common breastfeeding complication, were developed by nursing educators. We then trained 5 simulation persons (SP) as well as other nursing educators on each of these scenarios. Following the training, we began the workshop with 40 nurses participating divided into five 15-minute stations. In each station, 8 nurses and a nursing educator were present; 1 nurse interacted with the SP, while the other nurses were observing the patient and taking notes. After 7 minutes, the nurse educator debriefed the scenario and provided feedback to the nurse regarding her overall performance in the activity.

Results & Discussion

Nurses were exposed to common breastfeeding complications and were provided with an opportunity to improve and expand upon their knowledge and skills. An evaluation form was provided to all 40 participants. The results of this form were overwhelmingly positive and showcased the workshop was successful in enriching the nurses' knowledge and improving their ability to provide quality patient care. Based on the success and impact of this workshop, Soroka Medical Centre decided to continue running the workshop on an annual basis.

Keywords

Breastfeeding; Simulation; Breastfeeding Complications; Workshop

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Can psychological safety established in simulation improve workplace civility culture? - Describing the 'leak' of psychological safety into clinical practice after foundation doctor simulation

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

Incivility in the workplace adversely affects performance and psychological safety, with significant impact on staff wellbeing and patient safety(1,2). Psychological safety is essential in simulation-based education to facilitate learning by promoting trust(3), simultaneously fostering a civil learning environment(4). The bidirectional impacts of psychological safety out of the 'safe container' of simulation have recently been proposed(5), but a more nuanced understanding of the 'leak' of psychological safety into clinical practice is required. This research asked: does psychological safety in simulation translate to more civil behaviours in the workplace?

Methods

Following ethical approval, narrative inquiry was used to explore the perspectives of doctors reflecting on 'real-life' events in their clinical practice after an immersive simulation session. The simulation session was designed to allow newly-qualified doctors (foundation doctors) to rehearse core elements of managing acute medical situations, and did not incorporate learning objectives relating to civility or other aspects of professional behaviour. At the end of their first year of clinical practice, the foundation doctors were asked to complete a voluntary questionnaire that prompted descriptive accounts of how the simulation session had impacted their 'real-life' clinical practice. The accounts were analysed deductively for key themes, using a framework of civility behaviours based on Clark's Workplace Civility Index(6).

Results & Discussion

Between 2013 and 2018, 264 questionnaires were completed, with 528 different accounts. Our analysis identified three key themes relating to several of Clark's civility behaviours that portrayed the 'leak' of psychological safety into clinical practice. These were: (1) communication behaviours, such as respectful communication and attentive listening, using respectful language and sharing pertinent information with others (including a lower threshold to escalate); (2) supportive behaviours, including encouraging and acknowledging others, and demonstrating approachability and flexibility; and (3) self-awareness behaviours, such as an openness to others' points of view (including improved interprofessional working), and taking personal responsibility.

These results suggest that the open, safe space created by psychological safety in simulation may enhance the learning of some of these key civility behaviours, beyond the intended learning outcomes set for the simulation. Progressing the understanding of the 'leak' of psychological safety into the culture of clinical practice, we are keen to explore methods to take fuller advantage of this phenomenon. We propose explicitly incorporating discussion relating to benefits of

psychological safety and civility into the simulation. Further research will aim to investigate the effects of such a change, and the workplace impacts for our doctors and patients.

Keywords

Psychological safety, civility, translational simulation

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Can the VAST Course enhance resuscitation skills in a low-resource setting?

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

Outcomes for in-hospital cardiac arrest in low-resource settings (LRS) are often worse than in high-resource contexts (1). Adding non-technical skills (NTS) training to technical resuscitation skills (TS) has been shown to improve performance of resuscitation team members in high-resource settings (2,3). It is unknown if a similar effect can be achieved in LRS. Initiatives to improve resuscitation capacity and quality should be tailored to context. The VAST Course (VC) has demonstrated ability to improve participants' NTS in LRS (4). Pairing the VC with advanced cardiac life support training (ACLS) has potential to improve resuscitation performance and ultimately patient outcomes in LRS.

Methods

This mixed-methods study gathered data before, during and following a 2-day ACLS course combined with the 3-day VC. Healthcare providers (nurses, midwives, non-physician anesthetists, and doctors) involved in resuscitation of adult patients in 3 district hospitals in Rwanda were eligible for inclusion. Study participants were scored on their simulated resuscitation performance using a validated collection tool at 4 time points: immediately prior to ACLS, immediately after ACLS, immediately after the VC, and 4-months post courses. Primary quantitative outcomes were time to initiation of CPR. Secondary outcomes were time to epinephrine administration, time to defibrillation, and ten dichotomous outcomes evaluating the quality of resuscitation performance, for example "Were chest compressions of high quality?". In addition, qualitative outcomes exploring the barriers and supports participants identify to implementing resuscitation in the workplace after resuscitation skills training were sought through focus group interviews at 4months post courses.

Results & Discussion

This study recruited 48 participants. Table 1 details their demographic profile. Complete data sets across all four time periods were collected for 47 out of 48 participants. Formal data analysis is currently underway. Preliminary data analysis demonstrates improvement in time to initiation of CPR at each time point. Following the VC, there was a significantly reduced time to defibrillation. For all primary and secondary outcomes, there was no time regressions or reduced quality of CPR at retention testing. Qualitative data analysis is currently underway and will help inform a rich understanding of knowledge and skills translation from the simulation setting to the workplace.

The VAST Course builds participants' non-technical skills and applies core clinical frameworks to promote systematic patient care. This study highlights the benefit of combining the VC with ACLS for improving resuscitation performance. These results are important as they inform education program design to improve capacity and quality of resuscitation teams in LRS.

Keywords

Resuscitation, advance cardiac life support

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Challenging the nuances of pain assessment by using audio-visual simulations in nursing education: A descriptive study.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

Despite advances in research appropriate management of pain remains a challenging issue [1]. Assumptions persist about the influence of patients' gender, cultural background, and age on the level of anticipated pain. Surfacing inherent beliefs about pain is key to enhancing understanding of patients' needs and expectations, for appropriate pain relief and recovery [2]. Viewing and discussing best practices in pain assessment modelled through audio-visual (AV) simulations can be a powerful way to demonstrate how to engage with patients, understand their concerns and apply theoretical knowledge to practice. Incorporating health consumers' perspectives, through co-creation of the AV simulations [3], would add authenticity to the learning experiences.

Methods

Aim: Exploring the impact of new AV simulations modelling ideal practices on nursing students' behaviours and attitudes towards assessment of patients' pain. Areas examined included empathy, compassion, and feasibility and relevance. **Methods:** Research design was informed by the STROBE framework. Purposive sample of experienced nursing students from two large metropolitan universities. One of three AV simulations, co-developed with a panel of health consumers and clinical experts, comprised the intervention. Pre- and post-surveys explored participants': age, country of birth, gender, language/s spoken, previous experiences of pain assessment and a Compassion scale [4,5]. Questions exploring feasibility and relevance of the AV simulations concluded the post-survey. Descriptive, bivariate and content analysis were applied to data respectively.

Results & Discussion

Full data sets were provided by 314 students (64% RR) and 177 students (36% RR) from Curtin University and Queensland University of Technology respectively. Demographics across both cohorts were equivalent except for age, country of birth, and stage within the program of study.

Overall compassion scores at baseline were similar for both sites (Curtin M=4.09, SD=0.44; QUT M=4.18, SD=0.43).

Post intervention, overall combined compassion scores for all participants improved from M=4.12, SD=0.60 to 4.18 (SD

0.49).

Students reported the AV simulations were easy to understand and favoured for in-class rather than online delivery (Fig 1). The AV simulations were considered highly relevant, authentic representations of nursing practice and increased students' awareness of the nuances of pain assessment across different clinical situations. Specifically, the nurses' professional behaviours, responses and further actions illustrated within the AV simulations made students think about their own practice and improved their awareness of approaches to gain more accurate pain assessments. Well developed, co-designed AV simulations have high impact and can be used as preparation for or following clinical practice, across components of simulations, and for reflective practice activities.

Keywords

AV simulations; nursing students; pain assessment; co-design; consumers

References/Acknowledgements (Vancouver Citation style)

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Acknowledgements

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Clinical simulation for medical training

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Debriefing

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Introduction: Background, Context and Aims

Clinical simulation for medical training is being adopted worldwide by medical schools at an increasing rate. This paper presents research on the topic conducted by Nova Medical School at the Universidade Nova de Lisboa in Portugal. The aim was to verify the effectiveness of this new learning approach and suggest methods for improving performance.

Methods

230 undergraduate students were organised into groups of 5 and tasked with collecting patient medical history. The exercise featured a three-room circuit, where each room corresponded to a specific presenting complaint: headache, chest pain, breathlessness. Each group would enter a room and select a team member who would participate as the physician/interviewer. This team member was tasked with talking to the simulated patient with an aim to practice diagnosing medical history (a key area of practice for medical students)- operating under a strict time limit of 6 minutes. While this dialogue was occurring, other team members would rate the performance of the student-physician on several areas of performance (such as greeting the patient by name, getting information about presenting complaint, collecting past medical and surgical history, asking about family history, social history and lifestyle) using a score 0 or 1 (0-not addressed, 1-addressed). At the end of the 6 minutes, the team performed a debrief, highlighting areas of good performance and areas for improvement. This exercise was repeated a total of 3 times (swapping team members each time) and then teams would change rooms.

Results & Discussion

This investigation highlighted the value of immersive active participation for medical training. It was noted that participants found value in our novel methodology, where they played both the observer and physician roles, which stands in contrast to more passive methods of medical education such as video-based learning. It was also found that the timings of movement between rooms and the clarity of debriefing's conduction were the biggest performance blockers. For future work we aim to assess knowledge retention when using clinical simulation versus traditional medical education.

Keywords

Clinical simulation, medical training.

References/Acknowledgements (Vancouver Citation style)

Not applicable.



SOCIETY FOR
SIMULATION IN EUROPE

Co-designing simulation-enhanced training for first responder families

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

First responders experience duty-related trauma exposures and thus more mental health problems compared with the general population. Little education and support exists for loved ones who first responders rely on for support. We describe the co-design of a simulation-enhanced programme which aims to: (1) explore first responder families' experiences of social support and (2) involve key stakeholders in programme development, and (3) to prepare first responder families to apply principles of psychological first aid.

Methods

This project involves several key collaborators to translate the collective insights of key stakeholders into the design of a simulation-based intervention: (a) RCSI SIM, an academic unit, (b) Mental Health Ireland, a charitable organisation, and (c) community partners including Dublin Civil Defence. Kern's 6-step approach to curriculum development served as a guiding framework, supporting intervention development and delivery. Data collection included field observations, focus groups and semi-structured interviews during 6 co-design workshops. Thematic analyses were performed and shared with participants for further feedback. This research was approved by the RCSI Research Ethics Committee.

Results & Discussion

29 participants (16 first responders, 7 family members and 6 organisational representatives) shared experiences of critical incidents, help-seeking barriers and facilitators, and support preferences. Key themes identified the main barriers to help-seeking as: cultural stigma, ineffective communication, and perceptions of (tokenistic) organisational support. Data also revealed gaps in participant support such as the need to share information with family members and the practical communication skills that help manage responses to critical incidents. We describe the co-design process using an example of how to engage first responders and their families effectively to co-develop and implement an innovative training programme. Using participatory research methods, we contribute to current understanding of the experiences of first responder families and their existing social support sources. We demonstrate innovation in the combined use of co-design and simulation to develop a practical intervention for first responder families. Our work contributes to the growing field of co-designed interventions.

Keywords

Curriculum development, simulation, mental health, co-design, first responders,

References/Acknowledgements (Vancouver Citation style)

Thomas, P.A. & Kern, D. & Hughes, M.T. & Chen, B.Y.. (2015). Curriculum development for medical education: A six-step approach. Johns Hopkins University Press.



SOCIETY FOR
SIMULATION IN EUROPE

Cognitive interviews: A novel approach to post-event debriefing?

Format: Research Studies - Oral Presentations and Short Communications

Topic: Debriefing

Authors

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Introduction: Background, Context and Aims

Might cognitive task analysis (CTA) methods conducted by non-clinicians have educational value during high-fidelity simulation training of clinicians? We explored this question during a multicenter study aimed at better understanding clinician decision-making during acute crisis events. We evaluated whether non-clinician-facilitated cognitive interviews immediately following simulation scenarios were deemed by experienced clinicians to be an effective method of self-reflection and learning.

Methods

Board-certified anesthesiologists (BCAs) managed four standardized simulated crisis events (postoperative hypotension, preoperative chest pain, postoperative dyspnea, & post-emergence agitation) during an all-day study. Immediately after each scenario, we conducted a 40-minute cognitive interview (CI) to ascertain 'why' and 'how' the participant made decisions during the scenario. Each participant was interviewed four times during the study day – there was no traditional debriefing or performance feedback until the very end of the study day. Instead, after each scenario, CIs, based on established CTA methods [1-2], were conducted by trained non-clinician interviewers. At the start of each interview, participants were asked to write down 3-5 of the most salient events that occurred during the scenario. The interviews were designed to allow participants to reflect on their thoughts, key assessments, contextual factors, decisions made, and actions taken. To evaluate the educational value, after the fourth CI (and prior to an end-of-day clinician-facilitated debriefing), participants completed a 7-item survey (5-level Likert scale) and two open-ended questions (Table 1A). Only then did participants receive a 30- to 60-minute traditional expert clinician-facilitated educational debriefing covering the entire day. To receive continuing medical education credit, participants responded to a course evaluation form sent electronically two days after the course by a separate organization (Table 1B).

Results & Discussion

As can be seen from Table 1A, the 42 participants reported very high agreement about the educational value of the CIs including for relevance, reflection, and psychological safety. This was supported by numerous narrative comments. Scores on the CI survey were essentially indistinguishable from those in the traditional post-course survey completed by the same participants (Table 1B). These ratings are only slight lower than seen on similar post-course questions after traditional simulation-based maintenance of certification simulation courses for the same population [3 and 2021

unpublished]. These preliminary results suggest that cognitive interviewing could be an effective complementary approach to facilitating reflection and learning during high-fidelity simulation. Future studies should compare current debriefing paradigms [4] with CI-based debriefing of events in a more controlled experimental design.

Keywords

Debriefing, Interview methods, Cognitive task analysis, Cognitive engineering, Self-reflection, Learning

References/Acknowledgements (Vancouver Citation style)

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This work was funded by a grant from the Agency for Healthcare Research and Quality (AHRQ, R18-HS026158) to Vanderbilt University Medical Center (MB Weinger, PI).

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SOCIETY FOR
SIMULATION IN EUROPE

Coordination in simulated robotic-assisted surgery: novices versus expert teams in acute situations

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Studies suggest that health care teams adapt their coordination to the situation during critical events[1]. Strategies for the adaptation include increased information coordination and a shift from implicit to explicit coordination[1]. In robot-assisted surgery the surgeon is placed away from the patient and the rest of the team. This separation changes teamwork and workflow of surgery teams. Disruptions of workflow are considered a to be a potential risk to patient safety and are frequently related to coordination[2]. However, coordination behaviour in robotic assisted surgery is yet to be explored.

The aim of this study is to explore differences in coordination between routine and emergency situations for novice and expert teams in robot-assisted surgery.

Methods

A retrospective observational study. Videorecording of seven full-scale simulations were conducted. The scenario included one severe event after a period of routine work. Teams were either novices to robot-assisted surgery or experienced.

Team coordination behaviour is currently being coded.

Results & Discussion

Team coordination behaviour are being coded using the tool “coordination in acute care teams” (Co-ACT)[3], which uses two specific dimensions of coordination: task-specific coordination (information vs action) and coordination mode (implicit vs explicit). Our preliminary coding suggests that coordination behaviour changes from implicit to explicit when situation changes from daily routine to emergency

This study will provide information on coordination behaviour in robot-assisted surgery between routine and emergency situations for novice and expert teams. Differences in coordination between novices and expert teams is important when training new robot-assisted surgery teams.

Keywords

RAS, team training, coordination

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Curriculum development and transformation based on the student feedback

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

The professional training of medical students is a complex process aiming at acquiring a range of competencies. Implementing competency-based medical education requires the transformation of curriculum to foster harmonious acquiring of medical knowledge and attitude, as well as the development of the patient examination, procedural, communication, decision-making and clinical reasoning skills. The introduction of the Clinical Line enables the progressive development of competencies and broadens the possibility of continuous curriculum modification based on student assessment and feedback.

Methods

The concept of Clinical Line was introduced at Bukovinian State Medical University within the framework of the Erasmus+ CBHE project SAFEMED+ (Simulation in Undergraduate MEDical Education for Improvement of SAFETy and Quality of Patient Care, No. 561583-EPP-1-2015-1-KZ-EPPKA2-JP). At the end of the 2020-21 academic year, a survey was conducted to evaluate student experience and satisfaction with OSCE. The results of the survey were used for further curriculum modification and implementation of the Clinical Line.

Results & Discussion

According to survey results, the most challenging in OSCE were pediatric (31.8%), obstetrics/gynaecology (27.3%) and internal medicine (in particular, oncology standardized patients, 9.1%) stations/cases. Following the Clinical Line concept, the medical curriculum was modified aiming at the improvement of student experience and learning outcomes. More hours were allocated for the clinical skills (simulation) training within the courses: Patient Care (2nd year), Nursing Practice (3rd year), Internal Medicine, Pediatrics, Surgery, Obstetrics & Gynaecology, First Aid and Emergency Medical Care, Traumatology (4th – 6th year). New elective courses were designed and implemented: Medical Communication (4th year), Surgical Gynecology on Simulators (5th year), Simulation Training course, Virtual Patient (5th year), Simulation Training on OSCE Scenarios in Internal Medicine, Simulation Training in Pediatrics (6th year). At the same time, the created OSCE working group has updated the regulations on preparing and conducting OSCE based on the student and faculty survey results. Some recommendations were made taking into account the experience of visiting OSCE at the University of Santiago de Compostela (Spain) by the project partners. Due to the beginning of the war in Ukraine, the OSCE for the 2022-year graduates has been cancelled. Despite that, the first results of the student survey after piloting the new Simulation Training courses show 94.4% of student satisfaction, while major negative factors affecting the quality of learning are: constant stress (33.8%), lack of time due to volunteering (26.8%) and poor personal

organizational skills (7.0%).

Keywords

N.A.

References/Acknowledgements (Vancouver Citation style)

Authors express gratitude to EACEA, National Erasmus+ office in Ukraine and all partners of the CBHE project SAFEMED+ (Simulation in Undergraduate MEDical Education for Improvement of SAFETY and Quality of Patient Care, No. 561583-EPP-1-2015-1-KZ-EPPKA2-JP).

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SOCIETY FOR
SIMULATION IN EUROPE

Customized realistic synthetic models to introduce innovation to simulation-based training

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Human cadavers and animal models have been the main source for anatomic and surgical skill education. However, their limited availability, cost, different tissue behavior, logistical difficulties and ethical concerns are substantial constraints to widespread use. Current inanimate models are of insufficient fidelity, especially for advanced procedural training. Recent advances in additive manufacturing and medical imaging created opportunities for advanced tissue surrogates that may address many of the disadvantages of existing models and facilitate patient- and pathology-specific representations.

Hospital Virtual Valdecilla (HVV) has for two decades used live animals, cadaveric tissue, VR, and plastic models for simulation-based education and training. In 2020, HVV created an Innovation Lab to explore alternative models to better support procedural training and to use for just-in-time surgical training. We present our lessons learned.

Methods

Our multidisciplinary team uses Design Thinking, starting with problem definition, followed by ideation and then iterative design, development, and testing. For prototyping and fabrication, we initially relied on 3D printing. With experience, we realized that while adequate for stress demanding parts, to attain realistic tissue behavior we needed to explore mold casting techniques with silicone and hydrogel-based models. In collaboration with researchers at the University of Cantabria, we tested the mechanical properties of actual perfused organs to inform adjustments to the synthetic tissues. The resulting organs and associated models (including tumors) of differing elasticity and strength now provide realistic responses to physical interactions such as suturing and electrocautery (Figure). We are even able to realistically reproduce ultrasound images, such as in a prostate brachytherapy simulator (Figure). For models that require more dynamic behavior, we have introduced pumps and electronics to create pulsatile fluid flows, as seen in our Transcatheter Aortic Valve Implantation (TAVI) simulator (Figure).

Results & Discussion

With two years of learning, we have developed and implemented five technologies and applied these to eight working surgical training models. Four of these models are already used regularly in HVV courses.

The Innovation program was originally conceived as a resource for HVV's primary training mission. But appreciable synergy has developed between innovation and training – it is common for educators to contact the Innovation program to explore how simulation tools can be iteratively tailored to their specific training needs. More notably, over time, the self-image and culture of HVV has changed from being a 'simulation-based training' program to that of a center for innovation and learning.

Keywords

Cardiology, Urology, Engineering, 3d printing, Simulator, Prototyping, Engineering, Synergy, Surgery, Innovation

References/Acknowledgements (Vancouver Citation style)

The authors would like to acknowledge the financial support of Cantabria's Ministry of Innovation and Industry and the collaboration of LADICIM research group from University of Cantabria for materials characterization.

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SOCIETY FOR
SIMULATION IN EUROPE

Debriefing from the team leader's point of view as a positive experience.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Debriefing

Authors

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Introduction: Background, Context and Aims

The clinical environment is more complex, diverse and rapidly changing. One of the teaching methods that contribute to the development of clinical thinking is simulation training. The aim of this study was to develop a debriefing protocol in simulation training that can improve clinical thinking.

Methods

The essence of the study was that with the same team, after similar complex scenarios, the debriefing was carried out in the first case by the facilitator-coach, in the second case by the group leader of this team.

Results & Discussion

The result of the study was that the group leader was able to identify the risk group and debrief, according to the group members and their Likert rating, better than the coach facilitator. This is a new approach to debriefing.

An important point for the discussion is the presence during the debriefing of interest in the personal growth of each of the team members. The best result of the debriefing by the group leader makes it possible to approach this important element of simulation training in medicine from a new point of view.

Keywords

debriefing, team-leader, best result

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Debriefing simulation training in undergraduate medical education settings

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Debriefing

Authors

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Introduction: Background, Context and Aims

Debriefing is an important component of simulation training, as it allows for the practiced scenario to be reflected and improved upon. It marks the point of the simulation where learning occurs. Medical students in the process of learning specific psychomotor skills for the first time require other debriefing strategies than practiced professional teams. We present our recommendations for debriefing simulation training in medical school from a student perspective based on current literature on debriefing in clinical and undergraduate settings.

Methods

Medical students require a debriefing setting tailored to their level of education and skill. Especially early on, the importance of a qualified debriefing facilitator is paramount in order to guide early-on medical students through the discussion. It is important that, this way, the debriefing enables open conversation along with structured analysis of the scenarios or simulated techniques observed. Further, debriefing should be used to incorporate teaching moments, rather than simply revising the skills or procedures practices. Engaging individual members by keeping debriefing groups small, even if the simulation is held on a large scale, leads to more successful individual reflection and learning. We suggest the students follow two formats of debriefing concomitantly, namely hot and cold debriefing. Hot, being immediately after the event, and cold, being weeks after the event.

Over the years, multiple methods and techniques of debriefing have been utilized, but the benchmark technique still remains unidentified. The essential elements for debriefing by Cheng et al serve as a standard here, and must be translated into applicable methods according to the setting. For medical students, of these, “Ensuring psychosocial safety” and “Establishing debriefing rules” and “Addressing Key Learning Objectives” need to be especially taken into consideration.

Studies have highlighted that the use of post-clinical event debriefing has resulted in improved patient survival outcomes by residents and interns. Debriefing in medical students, more specifically in clinical years, offers better insights of patient diagnosis and can boost confidence in clinical rotations. This allows for them to learn to manage crisis situations and complications in a very early stage in their medical career resulting in forming a skillset useful for their residency years, and highlights the importance of incorporating a debriefing culture early on.

Results & Discussion

We recommend a focused approach in medical student debriefings in order to best utilize simulation in undergraduate medical education. Adapting debriefing methods to specific populations can improve the application of simulation in their respective contexts.

Keywords

medical school, medical students, debriefing, undergraduate education, education

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SOCIETY FOR
SIMULATION IN EUROPE

Decision-Making and Cognitive Error: A Novel Undergraduate Simulation Session

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Cognitive errors occur when an individual has the necessary knowledge required to reach the correct solution, however their decision-making process is faulty. Indeed, cognitive factors have been repeatedly identified as having a key and preventable role in medical errors. Despite this, education around decision-making and its role in medical errors is lacking in medical undergraduate curricula in the UK.

Medical errors affect both patients and healthcare professionals. Increasing and necessary attention is now being paid to the psychological impact on the 'second victim', that is the person who is responsible for the mistake. This psychological toll can take the form of depression, anxiety, and suicidal thoughts. Emotional candour - being open and honest about your emotions following an experience - has been found to help healthcare professionals cope with errors in a more positive manner.

We designed a half-day undergraduate simulation session on decision-making and cognitive error.

Methods

Educational Objectives:

1. Describe the key theories related to decision-making
2. Compare and contrast System 1 and System 2 thinking
3. Explain the role of decision-making in cognitive error
4. Discuss the psychological impact of error on healthcare professionals
5. Analyse own and others' decision-making process

Learning Strategies:

- Icebreaker- Bomb defusal game
- Decision-Making Tutorial- dual process theory, decision-making in cognitive error
- Small-group Discussion- emotional candour around personal experiences of error
- Non-medical Tactical Decision Game Simulation- 'Stranded on a Desert Island'
- Medical Triage Tabletop Simulation – Emergency Department Patient Triage

Session Overview:

This novel undergraduate session will give medical students an understanding of decision-making and cognitive error. They will explore different theories around decision-making, in particular dual process theory. Through the use of tabletop simulation, they will analyse their own and others' decision-making process, including the use of System 1 and System 2 thinking. They will develop an awareness and understanding of the role decision-making has in cognitive error in healthcare. They will participate in an open and honest conversation about their emotional responses in personal experiences with error.

Results & Discussion

This session will not only teach medical students about the decision-making process and its role in medical error, but uses the powerful tool of simulation to allow students to analyse and explore their own decision-making process in a safe environment prior to entering clinical practice as working doctors.

Furthermore, we hope that emotional candour following errors will help students learn to cope with mistakes in a more psychologically safe way.

Keywords

decision making, error

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Desenho e implementação de um programa de formação em ecografia clínica para equipes de emergência extra-hospitalar

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

A ecografia clínica está sendo introduzido em diferentes especialidades médicas como ferramenta complementar ao exame físico.

No campo das emergências extra-hospitalares, os pacientes com síndromes clínicas críticas são atendidos, com exames complementares limitados e em um ambiente as vezes "hostil". Por isso, recorrer a outras ferramentas como a ecografia pode ser de grande ajuda na tomada de decisões mais adequadas.

A capacitação dos funcionários do serviço de emergência pode ser um desafio interessante para os profissionais e também para o sistema. As oportunidades de treinamento para a prática da ecografia em um ambiente como pré-hospitalar não são frequentes. Não há programas certificados generalizados que regulamentem o conhecimento nesta matéria.

O nosso objetivo enquanto formadores ao desenvolver o treinamento passa por dois objetivos fundamentais, melhorar as competências dos participantes a quem se dirige e fazer com que essa melhoria se traduza num avanço no cuidado do doente.

Methods

Dada a necessidade detetada, foi criado um programa de formação semi-presencial para os 272 médicos de emergência do Centro de Emergência de Saúde Andaluz, sobre a administração da máquina de ecografia portátil em processos tempo-dependentes.

O programa consiste em uma fase online de trabalho em materiais bibliográficos e audiovisuais, e uma fase presencial, workshops de uma hora, 40 minutos de aquisição de imagem ou "treinamento prático" em "hands on training" e 20 minutos de interpretação de imagem patológica. Por fim, são apresentadas simulações de casos clínicos de atendimento ao paciente crítico, integrando a ecografia, com uma série de pontos críticos sobre os quais são incentivadas a reflexão e discussão entre os alunos.

Results & Discussion

Para a avaliação do itinerário foi utilizado o modelo Kirkpatrick, medindo satisfação, aprendizado, transferência e impacto. Por sua vez, foi criada um cadastro de ecografia para que as imagens adquiridas pudessem ser relatadas. Cada nível sucessivo do modelo representa uma medida mais precisa da eficácia do programa de treinamento. Seguem em anexo os resultados referentes aos níveis 1 e 2, tanto a transferência nos profissionais quanto o impacto estão atualmente em fase de avaliação, e serão apresentados como resultados finais em março de 2023.

Keywords

ultrasonography, emergency medicine, training methods; ultrasound education.

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Designing an on-line behavioural skills training for Psychology graduates: A pilot study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

In response to the Psychological workforce shortage during the recent Covid pandemic, an online training course has been developed to provide Psychology graduates with the knowledge and skills to prepare them for working within clinical contexts.

A central learning outcome of this course is students' ability to engage with patients and develop positive therapeutic relationships, as this is a critical component of success that spans psychological interventions (Wampold, 2015). The value of experiential learning in delivering communication, or behavioural skills training is well recognized (Mata et al., 2021). It allows students to practice and receive feedback on their verbal and gestural skills in a safe learning environment. However, delivering such training in an on-line environment presents additional challenges and few studies have described the components of such training, or evaluated its effectiveness.

Methods

Students experience of training, learning and skill acquisition following training was investigated as follows:

1. Experience & Learning

Following training, participants completed a post course questionnaire to capture their experience of training and learning. Participants rated their satisfaction with training (five-point Likert scale) alongside providing text responses to state what aspects of the training worked well and what could have been improved. The Participants were also asked to state what they had learned during the training session.

2. Communication Skills

Participants' change in communication skills pre and post training was examined. Working in pairs, participants completed, and recorded, a role-play exercise where they participated in a psychological consultation. In one version they play the role of the therapist; in the other they play the role of the patient.

Participants completed this exercise twice, pre and post training. The quality of participants' communication was examined across five categories: (i) verbal communication (ii) gestural communication, (iii) engagement and empathy, (iv) professional deportment and (iv) focus. For each category, observers rated participants' performance from video on a Likert scale based on predefined criteria. Participants' performance was compared pre and post training.

Results & Discussion

In the current paper we present the design of the experiential behavioural skills workshop delivered via an on-line platform. The training is currently being delivered and evaluated. Students' experience of the training, learning and skill acquisition will be presented.

Keywords

Psychology, Mental Health, Communication,

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Determination of medical faculty clinical students' attitudes towards patient safety: A mixed design study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Tugçe Mümin

Dilan Yurtseven

Introduction: Background, Context and Aims

The study was planned to determine the attitudes of medical faculty clinical students towards patient safety.

Methods

It is a mixed design study using quantitative and qualitative methods. The "Student Information Form" and "The Attitudes towards Patient Safety Culture Questionnaire (APSCQ)" created using "Google Forms" were e-mailed to the clinical students of the medical faculty. Following the collection of qualitative data, semi-structured focus group interviews were conducted with 6 people from each class. The data were obtained through video and audio recordings of the 45-minute interviews conducted through the Zoom program.

Results & Discussion

According to the results, 86% of 125 students did not receive any training on patient safety. The total score of the students on the APSCQ was 94.87 ± 14.32 . Six main themes and twenty sub-themes emerged from the qualitative data. The main themes are students' definitions of the concept of patient safety, students' misconceptions about "patient safety", students' knowledge about the scope of patient safety, situations witnessed by students that put patient safety at risk, deficiencies in educational processes on patient safety, and suggestions for educational approaches to patient safety. In our country, after medical school undergraduate education, physicians work as general practitioners in hospitals (emergency department, home care) or community health centers (family health centers). The lack of awareness of the students about patient safety is a serious problem. As a stakeholder in their education, the students demanded that they be provided with training, including learning active strategies for patient safety. Accordingly, we are planning a patient safety training module.

Keywords

Patient safety, medical student, medical education

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Developing a Psychological Safety simulation program for junior doctors – SAFE to Speak Up

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

The transition from medical school to internship and residency is one of the biggest changes junior doctors make in their professional lives. Junior doctors undertake a series of hospital rotations, exposing them to a range of clinical situations and environments. For many of them, finding their voice in a complex and often hierarchical workplace can be difficult to navigate. Not feeling safe to speak up and withholding questions, concerns or ideas inhibits learning opportunities, potentially compromises patient care, and can impact junior doctors' autonomy and well-being. Therefore, we introduced a novel simulation program to educate junior doctors about psychological safety at work and promote their ability to speak up in their own clinical contexts.

Methods

Our initial learning needs analysis showed a large gap in knowledge and training on psychological safety (92% of respondents). We conducted a fortnightly 30-minute simulation centre-based program for interns and residents at our tertiary hospital. The program is externally funded through a project grant and commenced in February 2021. Two simulation educators (one Emergency Physician and one Nursing Simulation Educator) developed and facilitated the simulations. We used three simulation scenarios involving anaphylaxis secondary to incorrect allergy documentation, medication error, and incorrect intercostal chest tube management.

Results & Discussion

After 20 months of our program, we have conducted 44 sessions with 174 participants. Our preliminary evaluation has shown an increase in confidence to speak up from before to after the simulations (26.5% to 80.4% either extremely or very confident). Translating this into a sustained level of confidence and measuring it is an ongoing area of work for us.

We believe using simulation to teach and reflect on psychological safety in the workplace has been beneficial for our junior doctors. Persistent promotion of psychological safety and cultural change is needed to ensure the program is impactful and its benefits widespread. In addition, we were able to develop a debriefing tool for psychological safety which can be utilised in both simulation scenarios and clinical contexts, including peer-assisted debriefing. Our SAFE to Speak Up tool stands for: [S]peak Up – were you able to speak up today? [A]ssess – what enabled/prevented you from speaking up? [F]eel – how did you feel as a result of speaking up/not speaking up? [E]ducate – what did we learn from this experience?

Keywords

N.A.

References/Acknowledgements (Vancouver Citation style)

We thank the Victorian Medical Insurance Agency Ltd for funding our program



SOCIETY FOR
SIMULATION IN EUROPE

Developing a regional simulation scenario bank for the Northern Ireland Foundation Programme

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

The UK Foundation Programme Curriculum was updated in May 2021. This introduced a mandatory simulation component. To complete each year of training the foundation doctor must demonstrate certain behaviours, relating to the foundation professional capability of clinical prioritisation, in a simulated environment.

In Northern Ireland, foundation doctors are distributed widely between five Health and Social Care Trusts and their training managed by the Northern Ireland Medical and Dental Agency (NIMDTA). There are 504 foundation doctor posts available each year. Delivering Simulation Based Education (SBE) to this population has proved challenging due to the space, faculty and equipment required. NIMDTA aimed to develop a regionally accessible bank of scenarios that could be utilised in situ to ease the pressure of creating educational content and attract faculty engagement.

Methods

The UK Foundation Programme Curriculum was examined to develop learning outcomes for the scenarios. An appendix within the curriculum suggests a list of scenarios that foundation doctors should be exposed to. This was utilised as a framework for cases to be included within the bank. A scenario template was created including an outline, equipment list, scenario flowsheet, clinical props, microteach materials, patient, confederate, and facilitator guidance.

Five simulation sessions of three scenarios were organised with foundation doctors and varying faculty to streamline and validate the template through meta-debrief and participant feedback. The bank was expanded to thirty scenarios and uploaded to the NIMDTA learning management system making it available to key educators throughout the region. A 3 yearly updating schedule was arranged to ensure ongoing relevancy.

Results & Discussion

The UK Foundation Programme utilises an experiential learning model wherein new doctors reach competence in a generic set of capabilities to allow delivery of medical care with indirect supervision. Due to the variability of location, speciality, and team providing an equitable training experience can prove challenging. Standardising SBE like this, seeks to address these differences by ensuring exposure to crucial generic learning outcomes.

The ambition for the programme includes evolving the scenarios to comprise learning from reported errors and greater multidisciplinary involvement. The resource hopes to alleviate the burden of material creation and refocus faculty priority on facilitation and debrief. By reducing the workload required to engage with SBE we hope to increase recruitment of faculty, many of which will only have limited availability due to the current healthcare climate.

Keywords

Scenario design, meta-debrief, foundation doctors.

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Developing agents of change in your scenario-based simulations: Transformative Agency through Double Stimulation

Format: Research Studies - Oral Presentations and Short Communications

Topic: Debriefing

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Introduction: Background, Context and Aims

Simulation is being increasingly used in health profession education to develop clinical and behavioural skills. However, there is a tension between simulation being merely a performative act against optimising the transformation of students' skills. Transformative Agency through Double Stimulation (TADS) [Sannino, 2015] is an approach to agentially enhance skillsets in other disciplines by repeating scenarios, such as in business, but has been rarely implemented within health professions education. To investigate this concept, we performed an ethnographic study of a simulation-based model of teaching in medical education informed by TADS.

Methods

The TADS study was performed in InterSim Education Centre, Queen's University Belfast, where, in groups of three, simulation naïve second year medical students undertook a scenario managing an acutely unwell patient. During a debrief, students evaluated their performance and experiences, where they, aided by facilitators, collectively identified areas of improvement. Post-simulation the students underwent a second scenario followed by a further group debrief. Individual interviews were conducted following this debrief, supplemented by field notes. All debriefings and interviews were audio recorded and transcribed to facilitate thematic analysis in a reflexive approach, providing a rich ethnographic description of the TADS approach.

Results & Discussion

All participants greatly valued the experience, reporting undertaking simulation benefited their learning. During the first debriefing they described being 'nervous but excited at the prospect of simulation training' before the first scenario. Reflecting, they identified areas to improve including 'initial assessment of the unwell patient' and the 'need for more organisation within the team', as well as 'improved communication and division of roles during the scenario'. Students' performances improved during the second simulation, in tandem with being more relaxed and confident in their approach. The embodied experience of implementing their perceived improvements were positive takeaways. In the individual interviews they commented that before the second simulation they 'had less nerves which led to a calmer atmosphere'. They also functioned more efficiently by 'reflecting on the first simulation, we understood increased organisation and communication would result in a better performance'.

Participants valued the opportunity to undertake a second scenario, feeling it allowed them to immediately apply their knowledge gained during debriefing. Our study showed the value of immediate repeated simulation in reinforcing areas of improvement resulting in not only superior performance but also an enhanced experience. Our pedagogical model

using TADS can be applied to other healthcare disciplines with use in interprofessional education important going forward.

Keywords

Multidisciplinary healthcare education

References/Acknowledgements (Vancouver Citation style)

Sannino, A. "The Emergence of Transformative Agency and Double Stimulation: Activity-based Studies in the Vygotskian Tradition." *Learning, Culture and Social Interaction*. 2015;4: 1–3. doi:10.1016/j.lcsi.2014.07.001.



SOCIETY FOR
SIMULATION IN EUROPE

Development of Simulation-Based Education to Improve the Management of the Hyper-Acute Stroke Patient

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Reperfusion therapies in ischaemic stroke have demonstrated reductions in morbidity and mortality. Outcomes however are time dependent with a reduction in time delay a key intervention for improving stroke outcomes. In the South Eastern trust, we have worked to reduce the time from arrival to the emergency department to the time of thrombolysis administration, also known as the 'Door-to-Needle Time' (DNT). In January to March 2022, the median DNT was 40 minutes, falling short of our target of 30 minutes.

Studies have shown that simulation-based education can improve hyper-acute stroke pathway performance and outcomes (1). We surveyed our medical specialty trainees on their experience of our hyper-acute pathway. They identified a lack of knowledge of the management of hyper-acute stroke, as well as issues in communication and teamwork. We implemented simulation-based education to improve the knowledge of our emergency stroke protocols, streamline our pathway, and address the human factors that may affect pathway performance.

Methods

We organised scenario-based simulation education for our medical specialty trainees led by a multi-disciplinary faculty. Each session addressed the management of acute ischaemic stroke and intracerebral haemorrhage, as well as thrombolysis aftercare and associated complications. There was an emphasis on the debrief in each session, allowing a psychologically safe space to ask questions and identify flaws in our current pathways.

We surveyed learners before and after each session to gauge improvements in knowledge and confidence using a Likert scale. Free text feedback was sought from both learners and our multi-disciplinary faculty to identify areas for improvement.

Results & Discussion

We noted improvements in both the knowledge and confidence of trainees in managing a stroke lysis call and potential complications of thrombolysis therapy. They also provided invaluable feedback regarding the staffing of our lysis team and strategies to streamline communication amongst the team and on-call consultant. We have added additional members to our stroke lysis team and have introduced a single point of contact using (Vocera)(2) technology. As a result of this education and changes to our pathway, we have noted improvements in our DNT.

We have arranged to expand our simulation programme locally, including a greater breadth of multi-disciplinary team members. We have shared our learning with our stroke colleagues across the region with our simulation education programme being adapted and implemented in other hospital trusts, improving stroke pathways across Northern Ireland.

Keywords

Stroke Medicine

References/Acknowledgements (Vancouver Citation style)

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Development of a low-cost, stable and recyclable ultrasound simulator

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

This project aimed to find a stable material to prepare low-cost and customizable ultrasound simulators, that could be used to teach and practice ultrasound techniques. So far, gelatine and ballistic gel have been widespread used, the main drawback of gelatine is that it hardly lasts longer than 48 hours without microbiological contamination, regarding ballistic gel, the compound described in this work represents an alternative with similar characteristics. Different materials were tested: silicone; agarose; Polyvinyl alcohol; and SEBS (Styrene-ethylene-butylene-styrene). SEBS proved to be the material that met the objective of this project.

Methods

A 10% w/w solution of SEBS (Kraton G1650EU) is prepared in mineral oil (Gran Velada) at 130 °C with a magnetic stirrer, once dissolved, maize starch is added (0.2% w/w) and kept in agitation for 15 minutes. The mixture can be coloured with paraffin dyes (0.1ml). The solution solidifies at room temperature acquiring a gel texture and can be melt again applying heat. To prepare the breast phantom, a 3D-printed mould with the shape of a breast is partially filled with the melt solution, before total solidification a gel bead (polyacrylamide) is added and once the solution is totally solidified, another quantity of solution is poured to cover part of the gel bead. The procedure is repeated to include another two gel beads. The phantom with vessels is prepared with a 3D-printed mould that has holes to introduce metal rods to simulate straight and Y-shaped vessels. The solution is poured over the mould and let it solidify, then the metal rods are taken out.

Results & Discussion

Figure 1 shows: a) the breast phantom practice; b) a simulated vessel with a needle inside; c) simulator prepared with recycled solution and with simulated tumours, the one on the left with a needle inside. SEBS is a low-cost polymer (11€/kg) soluble in mineral oil, that allows to prepare ultrasound simulators with high stability to microbiological contamination at room temperature and recyclable. The cost of the breast simulator (150g) is 4€. Ultrasound images captured with the simulator resemble the human tissue and both vessels as well as tumours at different heights can be simulated in order to train ultrasound-guided intravenous or intratumoral administration and biopsies obtention.

Keywords

Ultrasound simulators; SEBS

References/Acknowledgements (Vancouver Citation style)

Special thanks to Kraton Corporation for providing us with SEBS

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SOCIETY FOR
SIMULATION IN EUROPE

Development of a material for the simulation of micro laryngoscopic surgery with CO2 laser.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

Microlaryngoscopy is one of the most complex procedures that otolaryngology residents need to learn during their training period. So far, only silicon models are used for exploration and animal models for CO2 laser cutting, with the consequent problems of using organic models. An human anatomical laryngeal model with a new material that simulates the sensation of laser cutting is therefore presented for the practice of laryngeal CO2 laser microsurgery.

Methods

Given that the aim is to achieve a material that simulates a realistic cutting sensation and a specific tactile response, an interdisciplinary working team has been essential. A set of samples was prepared, varying the composition based on constant feedback from the expert surgeon. We have created a new material based on porcine gelatine, treated dry leather powder and water. The compounds are mixed with magnetic stirring at 60°C for 20 minutes and finally poured into a 3D printed mold. Each specimen was cut with a CO2 laser handpiece previous to microscopic laser resection using 2-3-watt energy delivery by a surgeon. Finally, a laryngeal model has been created with interchangeable modules of the new material at the level of the vocal cords, as a first approach to the final simulator. The laryngeal model has been created using bi-component silicone poured into 3D printed molds. The entire laryngeal block is supported by a 3D printed frame.

Results & Discussion

The new composite is very similar in terms of laser energy absorption to a larynx, in particular to the vocal cords. A group of expert surgeons from the Department of Otorhinolaryngology of the University of Navarra have verified that the sensation obtained is very similar to a real case. As a limitation, the tensile feel of the material is not yet optimal, so work is being done with other additives to simulate this feel. This material is a good approach to develop and validate a complete simulator in the future, which allows developing skills in the use of CO2 laser in microsurgery.

Keywords

3D printing, CO2 laser, microlaryngoscopy, surgical simulation

References/Acknowledgements (Vancouver Citation style)

N/A

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SOCIETY FOR
SIMULATION IN EUROPE

Development of a simulation-based course for International Medical Graduates to assist with their integration into the United Kingdom's medical system

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

International medical graduates (IMGs) are doctors who obtained their primary medical qualification outside the country they now practice in. In the United Kingdom (UK), one quarter of registered doctors are IMGs but many report struggling with the transition to the UK system(1). There are often significant cultural, procedural and educational differences from the places they have trained in. IMGs fare worse in many postgraduate exams, are more likely to be complained about to the General Medical Council (GMC) and often work in challenging areas, such as deprived or very rural parts of the country(2). We have been running introductory courses, known as “bootcamps”, for the past year, aiming to include all new IMGs to our Scottish health-board. Our courses aim to provide a “softer landing” for IMGs by addressing some of the unique challenges they face adapting to a new country and medical system.

Methods

IMGs attend a one-day course, as close as practical to their start date. An introduction aims to address non-medical challenges such as banking, schooling and housing as well as an overview of how the NHS and training programmes operate. This is followed by team training in local resuscitation guidelines. The afternoon comprises high-fidelity immersive simulation, focusing on managing acutely unwell patients, escalating to seniors and practicing handovers in the SBAR (situation, background, assessment, recommendation) format. Our scenarios are an upper gastrointestinal bleed, a severe asthma attack and a diabetic ketoacidosis. These topics were chosen as they are common clinical presentations that require immediate management from junior doctors and often require use of local protocols and escalation.

Results & Discussion

Participant feedback has been overwhelmingly positive. This course contributes to the wellbeing of IMGs by allowing them to meet and engage with colleagues in a similar situation. The chance to use local protocols in a safe, simulated environment has been noted to be particularly useful and participants are often keen for further training. Our initial intention was to offer this as a two-day event; however the arrival and commencement dates of IMGs can be unpredictable for complex reasons including visa, accommodation and travel arrangements. As a result, freeing up faculty and IMGs at short notice is very difficult. A more intensive one-day course has been the only practical option for

us. We feel that these courses are valuable for patient safety and contribute to our aim to make IMGs feel welcomed and valued in the UK.

Keywords

International Medical Graduates

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Do high fidelity simulation models improve a trainee's learning experience?

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

Authors

Peter McAlister

SimEd team

Introduction: Background, Context and Aims

In a tertiary paediatric unit we have a mixture of high fidelity simulation models and low fidelity simulation models. We are currently investing in new high fidelity simulation models in a variety of 'ages' in order to enhance the learning experience but does high fidelity simulation make a significant difference to the learning experience? High fidelity models also allow for clinical skills such as IO access, needle thoracocentesis and tracheostomy insertion.

Methods

We will have baseline qualitative and quantitative questionnaires looking at the learning experience with low fidelity simulation models as well as high fidelity models. Once we introduce new high fidelity models we will collect further qualitative and quantitative data looking at the experience had by those during the simulation scenarios and whether there is evidence of an improvement in the learning experience. We will also involve scenarios involving clinical skills such as needle thoracocentesis and IO insertion where there will be real time feedback following the clinical skill. We will analyse the data of both simulation scenarios and stand alone experiences involving clinical skills. Once we have collected data comparing high fidelity and low fidelity models we will assess the usefulness and appropriateness of both models.

Results & Discussion

Results are yet to be collected in full but is in progress. Discussion to follow

Keywords

Paediatrics Simulation High-fidelity

References/Acknowledgements (Vancouver Citation style)

Acknowledgements to SimEd team and Charitable funds in RBHSC, Belfast



SOCIETY FOR
SIMULATION IN EUROPE

Does sharing mean better caring? Shared leadership in healthcare emergency teams - implications for team training.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Shared leadership in teams is associated with improved team performance in a wide variety of settings but is under-researched in healthcare emergency teams. Leadership sharing exists in many trauma and emergency teams however impact on team performance is unknown. This research aimed to understand the relationship between both spontaneous and planned leadership sharing and team performance in simulated maternity emergencies.

Methods

Native teams attending a maternity emergency training day were the subject of two sequential studies. Initially an observational study calculated the distribution of leadership within the team using utterance coding and compared low and high leadership sharing teams. Data from this study informed a planned leadership sharing structure which was examined in a counterbalanced crossover trial. In the planned shared leadership scenarios, teams implemented a "logistics leaders" who was responsible for team and resource co-ordination and communications. The primary outcome measure in both studies was teamwork, as assessed by the Auckland Team behaviour tool. Secondary outcome measures included time to critical intervention, clinical checklist completion and in the planned leadership study, self-assessed teamwork (TEAM tool) and workload.

Results & Discussion

Sixteen teams were included in the observational study with universal spontaneous leadership sharing noted. High and low sharing teams had similar teamwork scores (5.02 vs 4.96, $p=0.574$). Low sharing teams had faster time to critical intervention (193s vs 312s $p=0.018$), but checklist completion was not different. Thirty-two teams participated in the planned shared leadership intervention, with no difference seen in the within-teams analysis of teamwork scores in the singular compared to planned shared leadership scenarios (5.3 vs 5.3, $p=0.91$). Secondary outcomes of checklist completion, time to critical intervention, self-assessed teamwork and workload were all similar between the singular and planned shared leadership scenarios.

Objective data from these studies does not suggest a benefit of shared leadership within the maternity emergency team context. While the observational data suggested a benefit to a more concentrated leadership distribution, the planned shared leadership dyad studied prospectively did not result in improved team performance. Teams training in shared leadership models should consider the risks and benefits of shared leadership in each context, particularly the division of

leadership tasks and how co-leaders work together most effectively. Teams training in a singular leadership model, should concentrate on how a singular leader can be supported by other leadership in the team that enhances, not distracts or disrupts from, their leadership.

Keywords

Maternity, Obstetrics, Leadership, Emergency teams

References/Acknowledgements (Vancouver Citation style)

This abstract summarizes research contributing to my PhD obtained through Monash University.

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SOCIETY FOR
SIMULATION IN EUROPE

EEDUSIM - training in hEalthcare EDUcatlon with SIMulation

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

In September 2022 the Department of Medicine of the University of Padova started a new project, called EEDUSIM - training in hEalthcare EDUcatlon with SIMulation with the aim to design a course to teach educators in healthcare about simulation.

The project has been funded with the first round of the KA220 HED European Erasmus+ Programme for Cooperation Partnerships for higher education and will see the cooperation of three european higher education institutions (HEI), the University of Padova (Italy), the Ludwig Maximilians University of Munich (Germany), the University of Medicine, Pharmacy, Science and Technology of Targu Mures (Romania), one industrial partner, MetamedicsVR (Spain) and two associated partners, CESI (Switzerland) and SESAM (UK).

Despite simulation being an effective way to train healthcare professionals, we know that some of the reasons why it is still not so widely adopted is the lack of knowledge and resources. The goal of this course is to enable HEIs and educators to develop curricula involving simulation by providing a standardized, validated comprehensive training course on simulation in healthcare.

Methods

The project programme includes the design and development of the training course, the revision of the course material thanks to a panel of international experts and the delivery of the course as a pilot to 20 educators from 4 different European countries with an online session (January 2024) and two weeks of in-person classes taught in Padova and in Munich (February and March 2024).

The course in total will span around 80 hours, covering all the aspects of simulation in healthcare education providing the theoretical background but also practical exercises. Traditional and new technologies (VR) will be illustrated with an eye for low-cost alternatives and cost-efficient solutions.

Results & Discussion

The feedback from both the trainers and the trainees involved in the pilot will be used to further refine the course and finally the course with all the materials will be collected in the course handbook, that will be made freely available on the project web portal and be a reproducible course that will foster the adoption of simulation in medical education curricula.

The project will span two years, from September 2022 to September 2024, with the project results expected to be published in Autumn 2024.

Keywords

Training, Simulation, Healthcare

References/Acknowledgements (Vancouver Citation style)

<https://dl.acm.org/doi/pdf/10.5555/193201.194617>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8253239/>

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EEG Analysis of the Construction of Empathy Towards People with Schizophrenia, After Exposure to Virtual Reality Environments

Format: Research Studies - Oral Presentations and Short Communications

Topic: Therapeutic uses of Simulation

Authors

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Introduction: Background, Context and Aims

Schizophrenia is a complex syndrome, with multifactorial neurodevelopmental changes, often subject to stigma and misunderstanding [1]. Empathy is a complex component of human emotional experience [2]. On the electroencephalogram, empathy is characterized by an activation of the right dorsolateral prefrontal cortex and a corresponding decrease in alpha activity [3]. Virtual reality can represent environments that induce emotions equivalent to what certain real situations provoke in an individual and can reduce stigma [4].

The main objective of this work is to explore whether immersive virtual reality tools alter brain and cardiac electrical activity, with a consequent increase in empathy, envisioning stigma reduction towards individuals with schizophrenia.

Methods

This study measured the electrical activity of the brain and heart of healthy individuals exposed to environments representative of the experiences of patients with schizophrenia. Two different tools were compared: a 360° immersive environment (group 1), where it was possible to experience in the third person some symptoms of a psychotic break; and a totally virtual immersive environment (group 2), where it was possible to experience, in the first person, typical symptoms of a person with experience of schizophrenia. A questionnaire [5] was also applied before and after the intervention, assessing empathy, social distance, and attitudes towards the person with schizophrenia.

Results & Discussion

The results suggest a trend towards a decrease in the coefficient of laterality of brain activity in both groups, with statistically significant differences along the exposure time. Concurrently, there are statistically significant differences in heart rate with a clear increase during exposure to the virtual tools. These results suggest an increase in empathy, characterized by the increase in the activation of the right dorsolateral prefrontal cortex, as well as the change in heart rate representing an activation of the Autonomic Nervous System [3,6]. Questionnaire responses corroborate these findings, showing statistically significant differences after exposure, with an increase in empathy and attitudes and a decrease in social distancing [5] (Table 1).

We conclude that both virtual reality tools can be valuable approaches to promote empathy towards individuals with schizophrenia. Further work is required to assess the medium or long term effects and if an increased empathy has impact on stigma, wrong beliefs, and discrimination.

Keywords

Schizophrenia; Empathy; Stigma; Virtual reality; Immersive Environment; Dorsolateral Prefrontal cortex; Electroencephalogram; Electrocardiogram. Mental health

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SOCIETY FOR
SIMULATION IN EUROPE

EFETIVIDADE DO DEBRIEFING NA PRÁTICA SIMULADA EM SAÚDE PARA MILITARES

Format: Research Studies - Oral Presentations and Short Communications

Topic: Debriefing

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Introduction: Background, Context and Aims

O debriefing tem sido visto pela evidência científica como o componente mais importante na simulação. Existe, no entanto, escassez de literatura sobre o papel do debriefing na simulação em saúde, com militares não-profissionais de saúde (North Atlantic Treaty Organization, 2017; 2019). Objetivo: verificar a influência do debriefing no desenvolvimento do conhecimento e desempenho prático dos militares

Methods

estudo quantitativo do tipo experimental, antes e após, com um grupo controlo. A amostra foi probabilística (n=104), constituída por militares de uma Força Nacional Destacada. Os dados foram colhidos através de vários instrumentos: questionário sociodemográfico/profissional, grelha de avaliação do desempenho prático e teste de avaliação de conhecimentos teóricos (Vilelas, 2017). Os procedimentos éticos foram considerados e autorizado pela comissão de ética da Unidade Investigação em Ciências da Saúde: Enfermagem (UICISA: E) da Escola Superior de Enfermagem de Coimbra (ESEnfC) com o Parecer No P698 07-2020.

Results & Discussion

A amostra considerada neste estudo tem uma média de idades dos militares foi de 28,90 anos, sendo o 12º ano a escolaridade com maior proporção. O grupo experimental (com debriefing) apresentou um desempenho prático final significativamente superior, comparativamente ao grupo controlo (74,06 vs. 63,44; $p < 0,001$). Por outro lado, o grupo controlo (sem debriefing), apresentou uma média superior no teste final de avaliação de conhecimentos teóricos (82,69 vs. 80,19). Conclui-se que na população militar este estudo corrobora com a evidência de que a participação no processo de debriefing confere aos sujeitos uma melhoria do desempenho prático (Ali et al., 2015; Bortolato-Major et al., 2019; Janicas & Narchi, 2019). No entanto, verificou-se que o processo de debriefing não conferiu um maior desenvolvimento dos conhecimentos teóricos adquiridos durante a formação.

Keywords

debriefing, simulação clínica, habilidades e conhecimento

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Enablers and disablers of learning through simulations as experienced by healthcare professionals

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

Clinical simulation is an important antecedent of quality improvement in healthcare. While there exists substantial quantitative evidence on how simulations improve healthcare quality, there is a paucity of qualitative research exploring how healthcare professionals experience clinical simulations and how these improve healthcare quality. Addressing this gap and relying on the practice theory perspective on professional learning and practice (Schatzki, 2010, Kemmis, 2009), we explore enablers and disablers of healthcare professional learning and their relationship to quality improvement in the healthcare context.

Methods

The study was conducted at the simulation centers of two larger hospitals in Sweden. Individual interviews were conducted with 21 healthcare professionals that previously took part in one of the following simulations: neonatal resuscitation (CEPS), advance medical life support (AMLS) and acute obstetric situations at child delivery care (PROBE). The study employed inductive content analysis. The study was reviewed by Swedish Ethical Review Authority (Dnr. 2020–07219).

Results & Discussion

The results suggest that feedback, location, co-participants, structures, and expectations are experienced as both enabling and disabling aspects for healthcare professional learning. Our findings further suggest that learning experience in clinical simulations and healthcare professionals' perceptions of quality improvement are the function of the combination of these enablers and disablers. By showing how healthcare professional learning is enabled and disabled through clinical simulations, our study contributes to the literature on quality improvement in healthcare. Our finding further provide practical insights and suggestions on how clinical simulations could be formed and executed to better enable quality improvements in the context.

Keywords

professional learning, experiences, simulations, content analysis, obstetrics, pediatrics, emergency care

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SOCIETY FOR
SIMULATION IN EUROPE

Enhancing the Surgical Training and Experience for Endodontic Microsurgery (ESTEEM)

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

Authors

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Introduction: Background, Context and Aims

Endodontic microsurgery (EMS) is a procedure indicated when a tooth does not respond to conventional root canal treatment. Current EMS training involves practice on bench-top animal models and clinical observations before residents perform EMS on patients. These residents often have no prior hands-on experience performing surgery, and animal models, unfortunately, do not permit for the entire scope of EMS. This translates to steep learning curves for residents when performing EMS on patients. Our aim was to develop an Endodontic microsurgical simulation training using high-fidelity 3D-jaw models to facilitate the acquisition of surgical skills, and improve the resident's coordination and familiarity with the surgical field.

Methods

We structured our simulation training curriculum based on the Ericsson 1996 framework¹ on deliberate practice. Residents in their surgical training (n=4) were given simulation practice once every two weeks using 3D-jaw models mounted on simulation heads, over the course of 2 months from July to August 2021, along with coaching and immediate feedback on their performance by their supervisors. Reflective debriefing² was done after each training to provide feedback on the residents' performance.

Pre-workshop and post-workshop questionnaires were done. The residents responded using a 5-point Likert scale on their level of agreement for eight items related to their confidence levels on various aspects of EMS for the pre-and post-workshop questionnaire and five items related to their 3D Endodontic microsurgical training after their first EMS. Focus group discussion was also conducted to examine the impact of the simulation training.

Results & Discussion

100% of the residents agreed that the simulation training covered critical content necessary for them to become competent for EMS. There was an improvement in the confidence in having treatment planning skills, surgical knowledge, surgical skills, preparedness, and confidence levels to perform EMS.

The post-EMS questionnaire found that the residents felt more prepared to perform EMS having gone through the simulation training and that it led to reduced stress levels when performing their first EMS. Analytic categories derived from the interviews were: Fidelity; safe environment; cognitive rehearsal; peer learning; and role of debriefing and reflective practice. All the residents agreed that the simulation training prepared them for surgical excellence.

Endodontic microsurgical simulation training using high-fidelity 3D jaw models provided a safe and efficient learning environment to develop the capacity and capability of the residents, improved their confidence while performing surgery,

and ensured that the residents were competent to provide the highest standards of care for their patients.

Keywords

Simulation, Dentistry, Surgical training, Endodontic microsurgery

References/Acknowledgements (Vancouver Citation style)

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2. Sabei, Sulaiman D. AL, and Kathie Lasater. "Simulation debriefing for clinical judgment development: A concept analysis." *Nurse Education Today* 45 (2016): 42-47.

The Endodontic Microsurgical simulation training was made possible by the SingHealth Duke-NUS Oral Health Academic Clinical Programme Education Support Programme grant. The high-fidelity 3D-jaw models were developed through a collaboration with AudMed Pte Ltd.

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SOCIETY FOR
SIMULATION IN EUROPE

Enhancing, not just locating learning: integrating pedagogy into the design of a simulation centre

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

Authors

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Introduction: Background, Context and Aims

Simulation centres offer a defined space for learning across the health profession education continuum. Yet, how the built environment can help to shape learning (i.e. built pedagogy) is a much neglected entity. A simulation centre should also enhance learning rather than function as a physical space to merely locate learning. In this conceptual work, we will consider how learning theory can be used to shape the design of a simulation centre (1). We will draw upon socio-cultural pedagogical theories and provide examples of how this was realised in the construction of a new interprofessional simulation at QUB (i.e. The KN Cheung SK Chin InterSim Centre).

Methods

The design process

Designing a simulation centre is a complex activity with multiple elements and mediating factors. From a socio-cultural stance, Culture Historical Activity Theory (CHAT) is a lens that can help conceptualise such a complex activity [2]. CHAT can afford an analytical tool to guide the various elements, and mediating factors, involved in this design activity. Between these various elements of the design activity, inevitably there are tensions - for example: faculty staff (subjects) considered that the design should be more hospital-centric but other stakeholders (community practitioners) expressed the need to have more primary care environments represented in the design. Resolution of these contradictions ensures progress is made in the design (See figure 1).

Building pedagogy

Learning via simulation-based education is a complex process. However, there are recognised patterns in how individuals learn in simulated environments and educational theories offer insights to these patterns. For the purpose of this conceptual work, we will draw upon three social-cultural learning theories, given their importance to the social dimensions of learning: Community of Practice (CoP) [3], Bakhtinian dialogism [4] and Zone of Proximal Development (ZPD) [5]. During the design process of our new simulation centre, aspects of these theories helped guide our discussions and influenced our final design.

Results & Discussion

Rather than merely locations to situate learning, well designed and pedagogically informed simulation centres have potential to enhance the learning process. As learners interact with teachers, providing a dedicated space that promotes the social practice of learning is important in any simulation centre design. With increasing understanding of learning theory, never has there been a better time to integrate learning theory into the design of simulation centres. As a simulation community there is a need to have a greater understanding of how learning theory can and should be embodied into the design of a simulation centre.

Keywords

Simulation centre, design

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Equity, diversity and inclusion in simulation-based education: using the SIM-EDI tool in NHS Lothian

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

There is an urgent global need to address equity, diversity and inclusion (EDI) in simulation-based education (SBE). This is aligned with wider efforts in healthcare education and healthcare organisations. Simulation has been suggested as a time of 'cultural compression' where the values and beliefs of a group weigh on participants with great intensity (1). It follows then that the simulation experience should be equitable, diverse and inclusive and offer space for reflection on these issues as and when they arise.

The SIM-EDI tool (2) is a novel framework designed to enhance and guide reflexivity within simulation faculty in respect to EDI issues as they relate to the design, delivery and debriefing of healthcare SBE. The tool has been studied by the developers within their service however is yet to be studied in another setting. This work will add to the academic conversation through study of the tool in a different cultural and educational context.

Methods

The SIM-EDI tool will be used within the core simulation programmes in NHS Lothian, (South East Scotland, United Kingdom) to guide conversation amongst faculty after the delivery of simulation sessions. Conversation will consider EDI themes including sex, race, gender, culture, and power with consideration given to any missed opportunities to explore or incorporate these themes within the simulation session. There will be an opportunity to reflect on any harms (potential or real) that have occurred within the session and consider biases. Actions arising from this conversation will be discussed and agreed by the simulation faculty. Useability and acceptability of the SIM-EDI tool in our context will be explored through faculty interviews, reflections, and observations, which will be analysed to draw out key themes.

Results & Discussion

The incorporation of conversations relating to EDI into SBE may influence the attitudes and behaviours of simulation faculty. In turn, this shift in culture within simulation teams may impact on the experience of SBE participants, through changes in the design and delivery of simulation programmes. Study of the SIM-EDI tool outside of the context in which it has been developed is a key step in understanding its generalisability and utility to simulation faculty in the broader global context. Its use may contribute to shifting attitudes in relation to EDI within the healthcare workforce and have potential to improve patient experience and outcome.

Keywords

N.A.

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Escaping the clinical confines of simulation

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Simulation in healthcare is traditionally aimed at training clinical staff (1,2). Non-clinical staff are integral to our health service and encounter similar teamwork and communicative issues in their roles, however, often do not receive the same opportunity for training. Escape rooms are immersive games that require team problem-solving to 'escape' within time constraints. The simulated escape room concept has become increasingly popular in developing teamwork skills amongst clinical staff (3). We noted a novel opportunity to broaden the audience of a simulation escape room experience to non-clinical staff with the intention of improving inter-disciplinary team bonding, communication skills and boosting morale within the wider hospital team.

Methods

40 healthcare staff including doctors, nurses, healthcare assistants, mortuary assistants, IT support, and administrative workers signed up in teams of 5 to tackle the escape room. Participants were shown a 5-minute briefing video to provide psychological safety and explain the storyline, before donning PPE and entering the simulation suite. Participants had 20 minutes to complete all the necessary puzzles required to escape. These puzzles involved the team deciphering tasks of verbal reasoning, decision-making, quantitative reasoning, spatial awareness, and situational judgment. Puzzles were entirely non-clinical in content. After escaping, teams completed a 20-minute structured debrief to identify areas of learning with particular focus on communication and teamwork.

Results & Discussion

28 of the 40 participants responded to anonymous online feedback forms. 60.7% of participants had never partaken in simulation before but evidently found it enjoyable as 92.9% indicated they would take part in future experiences. 96.5% reported improved communication within their teams with the experience providing "a fun way to practice communication" and "made [them] communicate in different ways". Others reflected on their teamwork and how "different team members [brought] different strengths". There was also a clear impact on staff morale with one participant saying it was "the best thing I've ever done at work!".

An escape room simulation is an effective way of engaging both clinical and non-clinical staff in the development of communication and team-working skills. We learnt that there is immense value in extending the simulation experience to non-clinical healthcare workers. Following the COVID-19 pandemic, both clinical and non-clinical healthcare workers are feeling disconnected from their colleagues (4) and we believe we have demonstrated how simulation escape rooms are

an effective opportunity for all healthcare staff to reconnect and build their team's skills in a fun and innovative way.

Keywords

escape room, innovative, puzzles, games, fun, communication, teamwork, morale, team bonding, clinical workers, non-clinical workers

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Establishing a government mandated national collaborative network for simulation-based learning – what is next?

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

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Introduction: Background, Context and Aims

Norway is a scarcely populated and elongated country – and hospital-based simulationists have traditionally developed and performed their simulation-based learning (SBL) activities on their own. In 2020, the Norwegian government formally recognized SBL as an important factor for improved patient safety in healthcare – and highlighted the need to coordinate SBL nationally ¹. This was the background for establishing InterRegSim - a government mandated national collaborative network for SBL in the Norwegian regional health trusts. InterRegSim was presented as “Hot topic” in SESAM 2022 Seville and this abstract is an update on the network’s subsequent work.

Methods

InterRegSim reports to the regional Chief Executive Officers (CEOs) in the four Norwegian regional health trusts. The initial mandate issued by the CEOs emphasized that the network should ensure a national structure and system for simulation and skills training, facilitate learning between health trusts and promote cooperation between different SBL environments.

After InterRegSim was established in January 2022, the group experienced the initial mandate to be somewhat diffuse. We therefore made it one of our first tasks to clarify the mandate. We structured our responsibilities into four main domains: Systematic evaluation, Competency development of healthcare workers using SBL, Professional development of SBL faculty, and Sharing (Figure 1). The clarification of the mandate will be presented to the CEOs during autumn 2022 to ensure the mandate is still in line with the task given to InterRegSim.

As an aim to facilitate cooperation and sharing among simulationists in Norway, we created a website ², which serves as a platform for disseminating our work – and other relevant work - nationally as well as internationally. The website is intended to be a resource for simulationists, clinicians, leaders and other stakeholders. We are currently working on developing indicators that can be used to measure the impact of the collaborative simulation network.

Results & Discussion

A network is defined as “a large system consisting of many similar parts that are connected together to allow movement or communication between or along the parts, or between the parts and a control center” 3. This definition works well with our mandate and InterRegSim can be considered the “control center” for SBL in the Norwegian public hospital system. InterRegSim works to increase the use of SBL, to learn from each other and to share available knowledge – with increased patient safety as the desired outcome.

In case of acceptance, we will by June 2023 be able to present further results from the work.

Keywords

N.A

References/Acknowledgements (Vancouver Citation style)

1 Nasjonal helse- og sykehusplan 2020-2023 - regjeringen.no

2 InterRegSim - Helse Stavanger (helse-stavanger.no)

3 Cambridge Dictionary | English Dictionary, Translations & Thesaurus

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SOCIETY FOR
SIMULATION IN EUROPE

Evaluation of Senior Medical Students' Approaches to Trauma Patients in Prehospital and Emergency Services Using Scenario Based Simulation.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

Authors

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Introduction: Background, Context and Aims

This study was conducted as a mixed method research, in which qualitative and quantitative data used together in order to evaluate the competencies of 6th grade interns in prehospital and emergency department in trauma patient management with simulation-based scenarios.

Methods

In the study carried out at Uludag University Faculty of Medicine Good Practices and Simulation Training Center between April 12 - July 08, 2021, scenario-based simulation was applied to 9 control and 9 study group students for quantitative data on the management of a multiple trauma case in the prehospital and emergency department and applications were evaluated with control lists. Before the evaluation, the study group was informed with a presentation and video related to management of trauma patients in the pre-hospital and in the emergency room, then scenario-based simulations including the management of the trauma patient in the pre-hospital and in the emergency room were done, and debrief sessions were held. In addition, the Modified Simulation Efficiency Tool was applied to the study group students. For qualitative data, focus group interviews were conducted with 8 control group, 6 study group students and 3 emergency service staff.

Results & Discussion

In the study, the trauma patient scenario simulations managed in the emergency department were found to be more successful than the trauma patient scenario simulations managed in the prehospital. A statistically significant difference was determined between the groups according to the simulation evaluation of trauma patients managed in the pre-hospital and emergency services ($p < 0.05$). According to the focus group interviews, it was determined that the students of both groups did not consider themselves sufficient in the management of prehospital-based trauma patients. As a result of the observations of the Emergency Service employees, it was determined that both groups were noticeably self-confident during the internship. As conclusion, it is recommended to add a course related to the trauma patient management to the curriculum and apply scenario-based simulation within the scope of the course so as to increase the self-efficiency of the students in the management of the trauma patient pre-hospital and in the emergency room.

Keywords

Emergency department, prehospital, intern, self-sufficiency, simulation, trauma management

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Examining within simulated and real patients personal space: bringing clarity to the blurred lines

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

The physical examination is an integral part of medicine. Yet any examination has the ability to encroach upon a patient's personal space. Failings in communication during examinations can lead to examinations being misconstrued as inappropriate advances towards patients. Society has grown intolerant to the unsolicited breaking of personal boundaries following the #MeToo movement; medical education needs to reflect this same intolerance in their professional studies and practice – including working with simulated patients (SPs).

This study aimed to gain insight into the lived experiences of medical students when working within the boundaries of a individuals' personal space in their training, including working with SPs. This builds on previous research from the perspective of the simulated participants. This knowledge could guide further teaching of physical examinations skills to minimise any breakdown of trust in this vital interaction.

Methods

This qualitative study employed hermeneutic phenomenology to explore the lived experiences of medical students when working within patients' (both simulated and real) personal space. Data was collected from seven medical students in Queen's University Belfast (QUB) through semi-structured interviews. This data was thematically analysed using Template Analysis in a reflexive approach.

Results & Discussion

Four main themes were constructed from our analysis (1) Transitioning into a privileged position; (2) Negative role modelling: emphasising the physical; (3) Consent: a dynamic and fragile state; (4) A simple act or a complex performance?

This study provided a unique insight into the lived experiences of medical students when working within an individual's personal space. The physical examination is a complex process influenced by a multitude of mediating factors. Medical educators need to reflect this complexity in teaching, mirroring societal interest around the boundaries of consent. The perspective gained from medical students has potential to shape this learning. Student's need a pedagogical and psychological safe space to develop their interpersonal skills and to prevent adoption of the 'clinical gaze' (i.e. when the clinical aspects of care are separated from the patient as a whole.) Insights from this research have already began shaping education in QUB in which educators are focusing on developing the pedagogical space needed to create more consciously engaged doctors. Based on this study, students are provided with student-centric guidance on how to approach patients (whether real or simulated) personal space and in partnership with that person, to enter this space for

their benefit of their professional training and practice.

Keywords

Medical Education, Simulated Participants, Personal space, Clinical gaze

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Exploring fidelity in the context of surgical trauma simulation

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

Authors

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Introduction: Background, Context and Aims

Training in the management of complex traumatic injuries is challenging due to the unpredictable nature of the patient population, the injuries sustained and the environment in which they occur. Learning how to manage trauma patients has traditionally been achieved with supervised, hands-on experience in an apprenticeship model, but this is not always possible, safe, or practical. Replacing real-world trauma cases with a scenario involving a human patient simulator (HPS) creates a relatively risk-free learning environment for surgical practice.

Methods

It is generally understood that 'fidelity' relates to realism, the extent to which the appearance, behaviour and environment of the simulation match what is being simulated; it is often reported to be binary (high or low), but it is unclear how that classification is determined. 'High-fidelity simulation' is a term used inconsistently by learners and educators in both published literature and in practice, but as a concept, is considered highly desirable. Data amalgamated from a combination of literature review, questionnaire, focus groups and qualitative feedback from a simulator development process, has been used to explore important aspects contributing to the fidelity of HPS in the context of surgical trauma.

Results & Discussion

With various types of fidelity reported in the literature including physical, functional, conceptual, and psychological and sociological, it is likely that combinations of these contribute to an overall judgement. Equally, there are numerous types of HPS used in surgical simulation: mechanical mannikins with various functions, cadavers, live animals, actors with wearable 'cut suit'. Fidelity should therefore be considered as a multi-dimensional spectrum; different HPS features will contribute towards attaining learning outcomes across different educational domains for learners across different stages of their career.

There is good evidence that the effect of physical fidelity – how the simulator looks – correlates with the skill level of the learner, but that increases in physical fidelity do not necessarily correspond to increases in educational effectiveness. Complex simulators are not appropriate where novices are learning basic skills, but at advanced levels training complex tasks, functional fidelity – what the simulator does – becomes more important. HPS need to provide accurate cues to support higher-level clinical decision-making, especially in a team environment.

Educational value in trauma simulation may not simply be about psychomotor surgical skills, but about sufficient fidelity to allow for learners to "suspend their disbelief" and act as they would during a real-world case, to allow for training in the cognitive and emotional learning domains.

Keywords

Surgery

References/Acknowledgements (Vancouver Citation style)

N/A



SOCIETY FOR
SIMULATION IN EUROPE

Factors influencing senior nursing students' situation awareness: a cognitive task analysis of simulated deteriorating patient events.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Simulation-based training has been identified as a viable means of enhancing SA and accelerating the novice to expert trajectory (Walshe et al., 2019). We undertook a cognitive task analysis (CTA) to identify the factors that influence novice nurses SA in order to inform the design of targeted SA training. Specifically, we sought to identify: (1) the types of cues final year nurses use to support the perception of deterioration; (2) how cues are integrated and understood; (3) The clarity and salience of information communicated during the escalation of care; and (4) the individual, task and situational factors that support or constrained SA.

Methods

This mixed methods study was framed in Endsley's SA theory (Endsley, 1995), and involved direct observations of high-fidelity simulations and retrospective post-simulation CTA interviews. A convergent triangulation design was applied. Data analysis was conducted using a process tracing technique with reference to an a-priori coding framework based on Endsley's SA taxonomy.

1. Simulation recordings were reviewed, and a time-lined account of activity prepared to identify key performances such as patient assessments undertaken, verbalisations, and care escalation.
2. Care escalation calls and CTA interviews were transcribed and coded according to the coding framework.
3. Based on all the extracted data two researchers independently determined whether deteriorating cues were perceived/not perceived, comprehended/not comprehended, and projected/not projected. When an item was not perceived/comprehended/projected, researchers selected the most likely underlying causal factors as per the study coding framework.
4. Data is described using descriptive statistics supported by illustrative quotations.

Thirty-three final year undergraduate nursing students participated, and ethical approval was obtained from the University's ethics committee.

Results & Discussion

The median cue perception was 60%. Perception was influenced by a significant decrease in vital signs perceived as situations intensified; the narrow application of the ABCDE algorithm; limited physical assessments; passive scanning behaviours and poor task automaticity. Incomplete perception and underdeveloped mental models influenced situational understanding. Escalation calls did not always accurately reflect the deteriorating situations. Clinical exposure to deteriorating patients was described as variable and opportunistic. A minority of participants displayed well-developed SA skills.

Conclusion

We have an obligation to implement models of training that ensure the practice readiness of graduates to recognise and act on early signs of deterioration. This requires approaches that provide learners with multiple opportunities to refine their SA skills. Authentic and supported clinical learning experiences and the adjunctive use of mastery/deliberate practice simulation-based learning experiences are recommended.

Keywords

Nursing, situation awareness, patient deterioration, undergraduate nursing education, deliberate practice

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

First Impressions Dental Intraprofessional Simulation (FIDIS): A novel education program

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

With a long history in healthcare education, simulation and inter/intra professional education (IPE) has become an essential feature of undergraduate healthcare education (1). Despite the effectiveness of both within pre-registration courses, there is a paucity of published literature related to simulation and intraprofessional (within profession) learning in dental and oral health education (2).

The Faculty of Health Sciences at Holmesglen Institute offers three full time dental courses in the areas of Dental Technology (DT), Dental Assisting (DA) and a Bachelor of Oral Health (BOH), with students educated separately. We aimed to develop and trial an immersive simulated IPE activity based on the care of a patient requiring a dental impression from admission to a dental clinic through to discharge. Objectives were derived from the Interprofessional Education Collaborative core competency domains of learning about roles and responsibilities, communication, and teamwork (3).

Methods

A team-based dental care delivery model was created with trios of student from the three dental courses grouped together to work in the dental clinic at three dental chairs. A total of twenty-four 30-minute rotations occurred throughout the day with each triad of students demonstrating knowledge and skills related to their area of practice and intraprofessional collaboration and teamwork. A dentist and dental assistant supervised the students at each dental chair.

DT students were designated the role of the 'patient' giving them the opportunity to experience a dental impression from a patient's perspective. DAs received the 'patient' in reception and escorted them to a dental chair. BOH students performed the mouth impression, with the DT assisting with chairside duties. Equipment was then sterilised by DAs in the sterilisation room, with the mouth mould continuing to the next stage of the impression making process.

Results & Discussion

The FIDIS model of bringing together vocational and higher education students provided a unique opportunity to showcase their specialised skills plus teach them the importance of providing safe, collaborative, high quality oral health care.

Students were expected to demonstrate an awareness of each other's scope of practice, their roles and responsibilities, teamwork dynamics, and effective intraprofessional communication skills, all undertaken in a respectful collaborative manner.

Feedback from students identified a sense of satisfaction working as a team in an authentic simulated industry setting. Whilst challenges existed, the FIDIS program also yielded valuable lessons to guide faculty in the implementation of IPE in the future and created a new team-based dental care delivery model.

Integrating IPL into the dental courses can prepare future dental healthcare professionals to work in teams and develop capabilities for intraprofessional practice.

Keywords

Dental, Simulation, Intraprofessional learning, Intraprofessional education, Pre-registration curriculum

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Framework for utilising moulage in OSCEs: taking authenticity to the next level

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

Objective Structured Clinical Examinations (OSCEs) are commonly used as a method of assessment in health profession education. They espouse to facilitate the fair assessment of behavioural skills and competencies. Whilst 'real patients' may act as cases in OSCE stations, more often OSCE stations draw upon simulation principles and techniques to 'create' clinical scenarios. Whether working with Simulated Participants (SPs) or manikins, simulation has a lot to offer in OSCE station development. However, a range of conditions are under-represented in OSCEs given the challenge of creating the clinical features of these conditions (e.g. dermatological conditions and wound assessment). Moulage, the ability to harness special effects techniques to present a wide range of clinical signs, has the potential to create such clinical features. Given the challenges of organising OSCEs (i.e. the need for consistently similar scenarios for large cohorts of students) guidance is required to optimise the effective use of moulage. In this conceptual presentation, we will present a framework, developed by a multi-professional team, which provides guidance in how best to utilise moulage in OSCEs.

Methods

We have developed a framework that provides practical guidance on the effective use of moulage in OSCEs. Key elements include: the alignment of moulage to the assessment objective(s) of the OSCE station, and early feasibility checks for appropriateness of moulage in OSCEs. We noted the importance of considering diversity issues and how moulage can act as a potential trauma trigger for SPs. We have provided a pathway for incorporating moulage into OSCEs from the development and co-production stage through to the piloting and contingency planning stage, and finally the post-OSCE evaluation and quality improvement stage. Practically, this framework highlights steps to ensure: the durability of moulage with multiple examinations, the ease of application, financial costs, and the training required (both for the SPs and the moulage artists) to ensure the effects are standardised and realistic. Other practical considerations included: the time required for application and removal for the moulage as well as the provision of equipment for the same.

Results & Discussion

This presentation will capture the important elements of this framework and use three case studies to illustrate these principles in action (melanoma, Lyme disease and self-inflicted wrists wounds). Such framework will be of benefit to those involved in OSCEs, or keen to get involved, in enhancing authenticity in a wide range of potential OSCE stations.

Keywords

Simulation, Moulage, Dermatology, Assessment, Diversity, OSCE

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

GameStroke: Gamification of the National Institutes of Health Stroke Scale (NIHSS) for simulation training

Format: Research Studies - Oral Presentations and Short Communications

Topic: Therapeutic uses of Simulation

Authors

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Introduction: Background, Context and Aims

Training prehospital personnel in identifying patients with acute stroke is essential to provide rapid treatment. This study aimed to investigate whether game-based digital simulation training is a feasible alternative to standard in-person simulation training.

Methods

Following a two-hour National Institutes of Health Stroke Scale (NIHSS) training course second-year paramedic bachelor students at Oslo Metropolitan University in Norway were invited to participate in a study comparing game-based digital NIHSS simulation training (intervention) to standard in-person training (control). For two months, the students in both groups were encouraged to perform simulation training. The intervention group's activity was logged through the application and the control group used an online self-report form. Time variables were collected in both groups during the intervention. At the end of the two-month simulation period, all participants performed a clinical proficiency test, and their results were assessed using a Bland-Altman plot with corresponding 95% limits of agreement (LoA).

Results & Discussion

Fifty students participated in the study. Individuals in the game group (n=23) spent an average (SD) of 42:36 min (36) on gaming and performed 14.4 (13) simulations on average, whereas the control group (n=27) spent 9:28min (8) simulating and performed 2.5 (1) simulations. Comparing time variables collected during the intervention period, the mean time for each simulated assessment was significantly shorter in the game group (2:57 min vs. 3:50 min, p= 0.004). In the final clinical proficiency test, the mean difference from the true NIHSS score was 0.64 (LoA: -1.38 to 2.67) in the game group

and 0.69 (LoA: -1.65 to 3.02) in the control group. Game-based digital simulation training is a feasible alternative to standard in-person simulation training to acquire competence in NIHSS assessment. Gamification seemed to give an incentive to simulate considerably more and to perform the assessment faster, with equal accuracy.

Keywords

Education, EMS, Mobile Application, Neurology, Prehospital, Serious Games, Simulation

References/Acknowledgements (Vancouver Citation style)

Thank you, class of 20' for your participation in this study and to game developer Fredrik Kaupang, you make visions come to life!

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SOCIETY FOR
SIMULATION IN EUROPE

Gamified Learning to Inculcate Patient Safety for Junior Doctors in the Emergency Department

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Introduction: Background, Context and Aims

The Emergency Department (ED) is a patient care setting that is at risk of patient safety infringements. Some reasons include ED overcrowding, multiple transitions in care, and varied experience of staff. It is concerning to note the recurrence of similar types of mistakes particularly amongst junior doctors and the patient safety committee has done root cause analyses to look for potential solutions.

Educational efforts in patient safety have traditionally focused on knowledge and skills. Modern educational theories suggest that learners learn better with near-miss mistakes. As previous efforts through frequent reminders and traditional educational efforts were ineffective, we decided to create a gamified lesson to imbibe patient safety concepts to our junior learners. We hypothesize that this activity may promote better engagement compared to a lecture on patient safety.

Methods

We collaborated with an institute of higher learning to create 4 scenarios of doctor-patient interactions in a virtual ED. Six patient safety issues were weaved into the scenarios. The learners were told to reprise their role as an ED doctor. Automated checklists were created to track whether the learners managed these tasks appropriately. Patient avatars would not 'die' or 'disappear' if inappropriate actions were performed or omissions occurred.

At completion of the game, learners answered a survey via QR code to reflect on their learning experience.

Results & Discussion

The virtual reality game took 7 months to create. Nineteen out of 23 junior doctors responded to the survey between May and September 2022. The learning experience was generally positive. However, results generated from the game play was concerning – Only 6 learners performed hand hygiene. Although all 23 learners ordered the correct medication to treat anaphylaxis, only 8 checked the medication label on the ampule and 4 administered the drug intravenously instead of intramuscularly. Seven out of 7 learners administered a benzodiazepine to a patient presenting with pseudo-seizure.

Patient safety is a difficult concept to teach and observing safety lapses in the game worries the safety committee. We are unable to prove if these misses in the learning environment would translate to safety lapses in the real world as sentinel events occur infrequently. There were also technical challenges to overcome in the game environment that might have affected the learners' performance. The authors see great potential in this mode of learning and wish to further harness its potential and design studies to assess its benefits.

Keywords

Emergency Department, Patient Safety

References/Acknowledgements (Vancouver Citation style)

The authors would like to acknowledge Temasek Polytechnic's Enabling Technology Collaboratory (ETC) for collaborating in this project.



SOCIETY FOR
SIMULATION IN EUROPE

Gender equity in CPR training manikins - a gender and rights-based healthcare issue.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

Achieving equitable outcomes for cardiac arrest globally is fundamental to the equality and rights of all humans. It is not understood how cardiopulmonary resuscitation (CPR) training, specifically representation of sex in CPR manikins, contributes to CPR outcomes. Many companies have developed diversity, equity and inclusion (DEI) policies to external expectations and standards, including the UN Guiding Principles on Business and Human Rights. It is unknown if CPR training manikin manufacturers have applied these principles to their product range, and if hospitals and other healthcare institutions are considering these issues in their manikin purchasing decisions, which would also address sustainable development goals (SDGs) and a right-based approach to healthcare as we approach 2030.

The aim of this study was to identify the sex and chest wall secondary sexual characteristics of CPR training manikins on the global market. The secondary aim was to identify if manufacturers had a publicly available sustainability or human rights policy or report addressing DEI and broader human rights issues, and if these explicitly addressed their products.

Methods

A conference exhibitor strategy was employed, whereby we screened exhibitors at 2021 international healthcare simulation and related conferences to determine if they supplied CPR training manikins or part task trainers. Conferences were identified through expert simulation networks and through recognised expert bodies in CPR such as the Resuscitation European Resuscitation Council. Screening was conducted to identify manikins and the inclusion of any sex or gender and chest wall secondary-sex characteristics. Publicly available company websites were screened for reference to sustainability, human rights and DEI policies and sustainability reports.

Results & Discussion

Ten conferences were screened, identifying 72 companies and 9 CPR manikin manufacturers. A total of 20 CPR manikins were included for analysis. Of the 20 manikins, the majority were identified as male (n= 8, 40%) and had flat chests - one had a breast overlay available. 7 (35%) manikins had no gender or sex specified, and all had a flat chest.

The remaining 5 (25%) of the manikins were named as female, and only one had secondary sex characteristics (breasts). Three companies had sustainability reports that addressed DEI for workforce only. One company included reference to diversity of products to meet inequalities.

This study demonstrates that adult CPR manikins available on the global market are largely homogenous, flat chested and do not have secondary sex specific characteristics. We urge CPR training providers and companies to collectively address the risk of involvement in human rights impacts including on the right to health through the potential for sex discrimination amid the current lack of diversity of CPR training manikins globally.

Keywords

manikin, resuscitation, CPR, sex, diversity, equity, rights-based, sustainability

References/Acknowledgements (Vancouver Citation style)

Acknowledgement:

Vanessa Zimmerman and the Pillar Two team for consultation and expert input about the UN Guiding Principles on Business and Human Rights (UNGPs). The University of Melbourne and Bond University librarians for their assistance with literature searches. Professor Michelle Telfer for review of sex and gender language and wording.

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SOCIETY FOR
SIMULATION IN EUROPE

Hackathon: Simulated Paediatric Emergency

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Healthcare has changed dramatically due to technological developments. However following a referral of a patient from a local district general hospital to the Paediatric Intensive Care Unit we reflected that despite technological advances, we still face challenges and limitations.

We therefore developed an exciting collaboration with Queens University Belfast Computer Science Department to host a hackathon of a critically ill paediatric patient to explore potential solutions to these challenges.

Methods

Fifty computer science students from Queens University Belfast attended our Paediatric Emergency hackathon. We presented a critically ill paediatric patient to the students. It began with the parent phoning 999 all the way to the local paediatric team discussing the patient with a Paediatric Intensive Care Consultant for transfer. To present the patient's story we used a mix of pre-recorded videos and a real time simulation. The students then divided into ten teams and they had 48 hours to develop their ideas to solve the challenges they observed and present them to the hackathon faculty.

Results & Discussion

The teams had some fantastic ideas and grasped the numerous challenges which we face when managing a critically ill patient. The winning team recognised the challenge Paediatric Intensivists face with making difficult decisions, often relying on only the information they receive verbally. They presented the use of wearable visual technology to provide the clinicians with the ability to witness and advise in real time. Therefore able to potentially improve clinical outcomes.

We are now working with the winning team in trying to develop this idea further and are looking forward to further collaboration. As technology will continue to drive healthcare in the future we believe it is important to collaborate with the technology sector to strive to achieve the best outcomes for our patients.

Keywords

simulation, paediatrics, hackathon, technology

References/Acknowledgements (Vancouver Citation style)

We would like to thank the students from Queens University Belfast for their enthusiasm and support of this event.



SOCIETY FOR
SIMULATION IN EUROPE

Harassment in Surgery: Assessing Differences in Perception.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

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Introduction: Background, Context and Aims

The surgical workplace is an environment in which medical students and residents frequently identify professional harassment. This study attempts to elucidate whether there are differences in perception in recognizing professional harassment using simulated scenarios among different team members in Canadian surgical settings.

Methods

An online survey was distributed to clerks, surgical and anesthesia residents, surgeons, and anesthesiologists affiliated with a Canadian medical school. The survey consisted of questions relating to the prevalence of professional harassment as well as 8 scenarios in which participants were asked to identify the presence/absence of harassment using a five-point Likert scale.

Results & Discussion

There were 1060 survey respondents consisting of 100 clerks, 215 residents, 431 surgeons from 11 specialties, and 314 anesthesiologists. Of all participants, 47% reported experiencing workplace harassment, with the most common type being psychological harassment (68%). Residents were the group with the highest prevalence (54%). One third of the participants said they had engaged in behavior that could have been perceived as harassment.

The first scenario shows that there is a difference in perception by age (p value 0,05) and role (p value 0,08), while the second scenario shows that residents' academic interests (p value <0,001) influence their perception. Regarding the 3rd scenario, surgeons perceived less professional harassment than the other groups (p value 0.001, clerks 58,7%, residents 56,9%, anesthesiologists 60,6% and surgeons 44,6%). A significant difference was observed between the groups in 4th scenario with respect to role (p value 0.001), gender (p value 0.02), age (p value 0.001) and clerks' surgical interest (p value 0.03). The 6th scenario showed significant differences by age (p value <0.001), gender (p value <0.001) and role (p value <0.001, clerks 92,1%, residents 94,2%, anesthesiologists 84,7%, and surgeons 77,5%) with a tendency for surgeons to view the scenario as not being professional harassment compare to their peers.

Almost half of respondents said they had experienced workplace harassment. Perceptions of harassment seem to vary according to role in surgical team, gender, and age. In many scenarios, surgeons tended to underestimate the presence

of harassment compared to other participants. This could become a future target for university programs to decrease the prevalence of this problem.

Keywords

Professional harassment, Surgery

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SOCIETY FOR
SIMULATION IN EUROPE

Harnessing simulation in advanced nurse practitioner skills in Critical Care

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

The Advanced Nurse Practitioner (ANP) role is becoming more prevalent across multiple specialties within healthcare in the United Kingdom and worldwide. Northern Ireland has seen a rise in this specialist nurse programme but in September 2022 the first ANP in Critical Care programme was commenced for trainees at Queen's University Belfast. The Curriculum is aligned with the Faculty of Intensive Care Medicine (FICM) syllabus for Advanced Critical Care Practitioners (2018). One of the key learning outcomes is that the trainees must be able to clinically demonstrate assessment and decision-making skills when caring for critically ill patients – a challenge in busy real world working environments of Critical Care.

Methods

High fidelity simulation provides a conducive learning environment that can help transform learners' skills in a psychologically safe manner. Moreover, we can adjust the cognitive load for learners, as they can be actively modified from the noise, interruptions and acuity of bedside care in situ. The trainees that are on the programme will be new to this role but have extensive experience in the critical care setting. Using our state-of-the-art facilities InterSim and with guidance from the FICM (2018) syllabus, opportunities for simulation were factored into the design of the Critical Care module undertaken as part of the programme.

Scenarios were designed in collaboration with existing experienced staff in both nursing and medical led simulation education as well as clinical nursing and medical staff with experience in the critical care setting. Such co-production design is aligned to the INASCL (2021) standards with a pre-briefing, the simulation itself and debriefing. Time was allocated to carry out a secondary 'double' simulation if it was felt that due to the learning needs of the students and psychological safety trainees should repeat the scenario. This is aimed at improving self-confidence and consolidation of knowledge.

Results & Discussion

As a new programme for trainees, writing the simulation was challenging to meet to learning outcomes. The simulation focuses on intra-hospital transfer- utilising their assessment, decision- making and communication skills to their fullest. Our Highly Immersive Virtual Education (HIVE) facility for simulation, transformed into a CT scanner allows for non-technical skills and human factors such as team work and self-awareness. Debriefing using the PEARLS healthcare debriefing tool (2015) aims to consolidate learning and micro-teaching opportunities led by our co-debriefing team of nursing and medical academics and clinicians.

Keywords

Critical Care, Advanced Nurse Practitioner, simulation

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

How to ensure national relevance and ownership in The Norwegian collaborative network for simulation in hospitals – InterRegSim

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

With an overarching aim to increase patient safety, the Norwegian Ministry of Health and Care Services tasked the four regional health trusts to increase the use of simulation-based activities, share resources, and establish a collaborative network of simulationists. Hence, an urgent need for systematic collaboration occurred (1), and as a result, the government-mandated collaborative network for simulation – InterRegSim - was established in January 2022. To ensure national relevance and involvement from the regional health trusts, effective work processes had to be established. This abstract aims to describe the process established to ensure that all regions have an impact on InterRegSim's focus and to ensure representative influence on the output of the work processes.

Methods

The InterRegSim collaborative consists of four employees (3.0 full-time equivalents), the leaders of the four regional coordinating units for simulation (RegSim), and two labour union representatives. The development of the working process is a result of collaborative work in the InterRegSim group.

The working process in InterRegSim is as follows (Figure 1.)

- Topics important for the regional trusts are brought up to InterRegSim at monthly meetings.
- Incoming ideas are discussed and prioritized in the collaborative meetings.
- InterRegSim creates a mandate for the dedicated working group.
- RegSim leaders will appoint staff with competence to join the working group.
- An InterRegSim employee facilitates the working group and is responsible for the collaborative work progress and achieving.
- InterRegSim distributes the recommendation for input from the hospital simulation communities through the RegSims.
- Inputs from the hearings are processed by the InterRegSim working group.
- Ultimately, the finalized work is distributed and promoted for implementation in the regional health trusts, and shared

at www.interregsim.no

Figure 1. The process of the joint work in InterRegSim

Results & Discussion

Despite relatively short timeline since the establishment, we have still managed to achieve preliminary results, indicating that the working process is feasible.

Examples of work that has been accomplished through this process are; agreement on the values for InterRegSim, the cultural adaption and translation of the Code of Ethics as a national guideline for simulationists (2), and the development of a Norwegian dictionary for simulation terminology (3) .

Works in process are; agreement on the basic faculty development of facilitators in Norway, a national recommendation for scenario construction and design, a national bank of scenarios including attributes such as ECGs, X-rays, blood samples, etc., and a national register for research on simulation activities carried out in Norwegian hospitals.

We describe the input and process here. The question of effective implementation will be based on the combined effort of national, regional, and local efforts.

Keywords

National collaborative network for simulation; InterRegSim, Work process

References/Acknowledgements (Vancouver Citation style)

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3. www.interregsim.no

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SOCIETY FOR
SIMULATION IN EUROPE

How to optimize the labor costs of Medical Simulation Center?

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

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Introduction: Background, Context and Aims

These days, management of the Medical Simulation Center (MSC) is a major challenge. Individuals responsible for functioning of these units often have to face the dilemma between "quality" and "quantity". The maintenance costs of the MSC are high, so the optimal budget usage is the key to maintain the highest level of teaching, as well as further development of educational services.

Methods

The authors tried to present ways how to optimize the MSC labor costs, based on their own experiences. In their opinion, there is a need to draw more attention to the economical side of MSC functioning, based on developed methods, good practices or programs which enable more effective budget management. Moreover, the work contains a non-systematic literature review for the period 2012-2020.

Results & Discussion

The challenge for MSC managers is inextricably linked with the world's economic situation. The growing costs of maintenance related to the utilities usage mean that the main criterion for the purchase of particular equipment is its price which does not necessarily translate into the equipment quality. Individuals responsible for running activities of the MSC should keep a cost estimate related to usage of disposable equipment. That equipment review allows to estimate the expenditure plans, which based on consumption report, allows rationalizing the budget. Furthermore, determining costs could also allow to verify what scope of training and courses should include teaching and technical staff giving the simulation classes. What is more, this form of staff development should have measurable translation into clinical practice. Cooperation between MSC and healthcare units could create an opportunity to reduce unjustified costs. Skillful budget and human resources management, building relationships with the external environment and regular equipment service not only a reasonable financial management, but also strengthen the MSC position in the medical education

services market.

In their work, Maloney and Haines (2016) present types of cost-benefit analysis related to effectiveness of medical simulation, including Cost-effectiveness analysis (CEA) and Cost utility analysis (CUA) (Maloney & Haines, 2016). Mucke et al. (2020) work on methods of cheaper implementation of AV (audio-video) equipment seems equally interesting. Furthermore, Best Practices Standards in Healthcare Simulation (2021) emphasises that the business plan and financial management should constitute a peculiar foundation for work, development and activity of MSC at the highest level.

Keywords

costs, management, Medical Simulation Center

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How to teach BBN skills through simulation ?

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

Breaking bad news (BBN) is a particularly complex task to perform. Simulation as an educational tool can enable caregivers to develop non-technical skills specific to this task like communication skills (1). Of the different types of simulation, virtual reality (VR) is experiencing a great expansion in medical education. Evidence suggests that this method can also be used to develop non-technical skills. However, VR impact on BBN non-technical skills remains scarce. Therefore, the aim of this study is to compare VR and Peer-to-Peer (PtP) simulation in terms of BBN non-technical skills development.

Methods

Using a randomized controlled trial design, 34 physician trainees were assigned either to VR (intervention) or PtP (control) group. At T0, we assessed both groups using the Breaking Bad News Assessment Schedule (BAS) and the SPIKES competences form through a standardized patient simulation. At T1 participants were trained using either PtP or VR. In the PtP group, role plays were performed in which trainees had to play the patient or the physician sharing the bad news. In the VR group, trainees had to deliver the bad news to an avatar in a VR environment. At T2, both groups were evaluated a second time using the same scales and modalities as described during T0.

Results & Discussion

The BAS score shows a significant increase in both groups. Surprisingly, this total BAS score increased more significantly in the PtP group than in the VR group with scores of 90.94 ± 8.65 versus 84.82 ± 9.41 respectively ($p=0.015$). Satisfaction Analysis With Learning (SWL) and self-efficacy score did not explain this difference ($p=0.73$ and $p=0.22$). However, we hypothesize that better scores were obtained in the PtP group because participants had the opportunity to experience the reality of a patient receiving bad news. Even if role-playing seems to show a better impact on learning, VR remains an efficient, safe and perfectly reproducible method. A great avenue of research could identify which modality should be used based on learning objectives and learners' experience to maximize the pedagogical impact.

Keywords

Communication, Virtual Reality simulation, role playing

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Human Factors Online: the power of digital forms of education to teach human factors

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

Crew/Crisis Resource Management (CRM) aims to improve non-technical skills to reduce and prevent medical errors in healthcare (Deschepper et al., 2021; Gross et al., 2018). The demand for an e-learning that introduces CRM and the CRM principles in healthcare is increasing. Previous research described the positive effects of an e-learning on reaction and knowledge (first two levels of evaluation; Kirkpatrick) (Rouleau, et al., 2019; Sinclair, et al., 2015). However, little is known about the extent to which the knowledge gained in an e-learning is transferred to practice (behavior, third level of evaluation; Kirkpatrick) (Rouleau, et al., 2019). The objective of the study is to develop an e-learning that introduces CRM and its principles and to determine the learning level achieved after completing the e-learning (reaction, learning, behavior; Kirkpatrick's model: levels of evaluation).

Methods

In 6 Flemish Hospitals in Flanders (Belgium) 48 nurses of both acute and non-acute care settings tested and evaluated the developed e-learning between October 2022 and March 2023.

At the first phase of the study, the nurses completed the e-learning. Additionally, the perception and experience, as well as the acquired knowledge according to CRM and its principles were evaluated (level 1 and 2; Kirkpatrick). More specific, before and after the e-learning the nurses completed the Human Factors Attitude Scale and a questionnaire concerning the quality of the e-learning.

At the second phase of the study, we examined whether the e-learning leads to a change in behavior (level 3; Kirkpatrick). Therefore, the participants take part in a simulation after going through the e-learning. This simulation occurred in an immersive room where a 270° projection is used, making it possible to project one's own work environment. In this simulation, a realistic scenario is presented in which the learned CRM principles can be applied. The researchers evaluated, by completing the Clinical Teamwork Scale, the extent to which the CRM principles are applied in the simulation. After the simulation sessions, in focusgroups we explored the extent to which the e-learning played a role in the application of the CRM principles.

Results & Discussion

The developed e-learning 'Human Factors Online' and the results of the evaluation will be presented. The developed e-learning is applicable in healthcare as well as education to teach, repeat or reinforce the CRM principles. As a result, the developed e-learning contributes to more effective teamwork in crisis situations and increases patient safety.

Keywords

Crisis Resource Management, simulation, human factors, e-learning

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Human Factors in Theatres

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

The Human Factors in Theatres Project is an interprofessional, in situ Simulation training programme. The aim of this project is to improve patient safety, team performance and staff wellbeing.

Methods

This project has been developed in partnership with Medical, Nursing, Allied Health Professionals and Senior Theatre Management.

The main component of this programme is regular in situ Simulation sessions that are run in the Emergency Operating theatres. These sessions are attended by the multidisciplinary teams that are posted in that theatre for the day. Each session is also attended by a member from the senior management team, in order to gain insights and to implement any changes that may result from these sessions.

The scenarios are based on adverse events that have occurred in the operating theatre contexts. The scenarios have two components. The first is related to an error or mistake (e.g., wrong route injection of Local Anaesthetic drugs) and the second is management of the consequences of the error (e.g., management of systemic Local Anaesthetic Toxicity). The simulation sessions are facilitated by trained faculty with a particular emphasis on psychological safety. Therefore, these scenarios are facilitated so that the individual making the "mistake" is always a member of the faculty. This ensures that participants do not feel spotlighted and afraid to participate. The participants are informed at the start that these simulations are testing the systems and processes and not looking at an individual's clinical skills or ability. The debrief is conducted in a dedicated quiet space, with refreshments being provided for the participants. The debrief is structured around the Human Factors Pyramid model (figure).

Participants are encouraged to first explore the system level factors that contributed to the error or event. Subsequent discussions revolve around how the team could have acted to mitigate some of inherent risks. There is particular emphasis placed on team vigilance, psychological safety to speak up and to build a culture of compassion and support for each other.

Results & Discussion

We believe that this project is a powerful way to use simulation to drive positive change.

These sessions have resulted in several system level interventions. The feedback data from the participants indicate that these sessions have a positive impact on staff morale and team culture.

There is ongoing monitoring on the impact of this project on patient safety reports and staff psychological safety index surveys.

Keywords

In situ Simulation, Human Factors, Psychological Safety in Simulation.

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Iberoamerican consensus on learning outcomes for the acquisition of competencies through clinical simulation in undergraduate medical studies.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

Medical students need to develop essential competencies to successfully manage patients' health problems and assume general clinical responsibilities. This study aimed to reach an expert consensus on the specific learning outcomes (LO), which can be achieved through clinical simulation, related to the acquisition of these competencies.

Methods

The scientific committee (6 members) peer-reviewed a Spanish university reference document (according to the European Higher Education Area) on the competencies of students during their undergraduate studies in medicine. Sixteen competencies and 75 LO were chosen that could be trained and assessed by simulation. Based on the scientific committee's network of professional contacts and following the Delphi consensus expert selection criteria, an international panel of 19 simulation experts from seven Latin American countries was selected using a snowball sampling technique. The expert panel participated in a two-round modified Delphi procedure (REMODE Variant) using electronic questionnaires, and a formal consensus was reached on the appropriate LO for simulation training for the Bachelor of Medicine.

Results & Discussion

After the second round of consultations, a statistical consensus was reached for all 75 LO. Sixteen of these formed the core of the most relevant or essential ARs for working in a simulation environment, occupying the top 25th percentile of mean scores with the highest degree of consensus.

This Ibero-American consensus on LO that can be observed and acquired through clinical simulation provides a framework to assist medical schools in planning and delivering undergraduate training procedures through simulation. The study also suggests essential LO as a starting point for the design of simulation training programmes in less experienced centres

Keywords

Education medical undergraduate, Consensus, Learning outcomes, Clinical competence, Simulation training

References/Acknowledgements (Vancouver Citation style)

Consensus Panel Members

Alonso Mateos Rodríguez (emergency physician, Spain), Analia Castiglioni (Internist, USA), Carmen Gomar Sancho (anesthesiologist, Spain), Constantino Tormo Calandín (intensive care, Spain), Cristina García de Leonardo (neurophysiologist, Spain), Diana Monge Martín (Preventive medicine, Spain), Diego José Palacios Castañeda (intensive care, Spain), Emilio Cervera Barba (family doctor, Spain), Fernando Caballero Martínez (family doctor, Spain), Fernando Javier Torres Jaramillo (surgeon, Ecuador), Francisco Javier Escobar Cantero (emergency physician, Paraguay), Francisco-Javier Ruiz Lorenzo (intensive care, Spain), Irving Omar Sánchez Herrera (emergency physician, México) Jesús Daniel López Tapia (emergency physician, México) Joseba González García (anesthesiologist, Spain), Juan Cendan (surgeon, USA), Juan José Vázquez Estévez (paediatric surgeon, Spain), Manuel José Párraga Ramírez (intensive care, Spain), Marcos Expósito Rodríguez (emergency physician, Spain), María Alejandra Casen (endocrinologist, Argentina), María Cristina Rodríguez Díez (family doctor, Spain), Maria de Gracia Adánez Martínez (emergency physician, Spain), María H Velázquez (family doctor, USA), Norberto Omar Barumgartner (Cardiologist Argentina), Pablo Arellano Graell (surgeon, Chile), Roger Ruiz Moral (family doctor, Spain), Sophia Denizón Arranz (family doctor, Spain), Salvador Espinosa Ramirez (emergency physician, Spain).



SOCIETY FOR
SIMULATION IN EUROPE

Impact of a short-single, technology-based self-training cycle on CPR knowledge and skills acquisition: a quasi-experimental study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

Early and efficient cardiopulmonary resuscitation (CPR), with a focus on chest compressions, is a key element in cardiac arrest victims' survival. The success of resuscitation does not only depend on the immediate initiation of the maneuvers, but also on the quality with which they are applied. Traditionally, instructor-led training courses remain the most frequently used method for CPR training, although it can be time consuming and expensive. To overcome these limitations, several devices are available with automated feedback on the main components of chest compressions [1]. This study aims to study the impact of a short-single self-training cycle on the acquisition of CPR knowledge and skills, using a manikin with automated feedback.

Methods

A quasi-experimental pre-post study was implemented, with a convenience sample constituted by voluntary medical students from the Faculty of Medicine of the University of Porto. Ethical approval and study registration (NCT05493189) were obtained prior to the study. Students had no formal training in CPR prior to this study. After filling an informed consent, participants were submitted to a pre-test consisting of 10 CPR theoretical questions, followed by 2 minutes of continuous chest compressions in a training manikin. After the pre-test, each participant underwent a 30-min period of technology-based self-training. Laerdal Little Anne QCPR was the selected training manikin because it allows real-time feedback and data recording through a mobile app. Immediately after self-training, participants undertook a post-test similar to the pre-test. The theoretical scores were calculated as the sum of all corrected answers (maximum score: 10 points). Practical scores were extracted from the mobile app and measured the quality of compression parameters, namely frequency, depth, and recoil (in %). Statistical analysis was conducted using the IBM SPSS Statistics® software, version 28.

Results & Discussion

Data was collected from 52 individuals, with mean age of 22 ± 2.6 and 76.9% females. Statistically significant differences were found when comparing the pre- and post- scores, for both theoretical and practical tests. Theoretical mean scores increased from 6.1 ± 1.7 to 7.3 ± 1.6 , while practical mean scores increased 2-fold, from $43.6 \pm 35.2\%$ to $95.6 \pm 9.4\%$ (Figure 1). These results suggest that a short-single self-training cycle on CPR, using a training manikin with automated

feedback increases theoretical knowledge, but most notably increases the quality of practical skills. Further investigation is needed to evaluate the retention of these skills over time.

Keywords

CPR, chest compressions, quality, skills acquisition, self-training

References/Acknowledgements (Vancouver Citation style)

1. Resuscitation plus (2021), 6, 100108

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SOCIETY FOR
SIMULATION IN EUROPE

Impact of a simulation intervention on the phenomenon of second victims in the emergency room

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Pontificia Universidad Catolica de Chile

Introduction: Background, Context and Aims

The term second victim refers to health personnel who participated in an adverse event and suffer the psychological and physical consequences of having made a mistake. The best method to deal with this phenomenon is unknown. In our work we propose the use of clinical simulation as a tool to generate a temporary impact on second victims.

Methods

Prospective, observational and analytical cohort study. Where a group of professionals from the emergency services of the UC-Christus Health Network participated in a clinical simulation and another in a teaching class. We measure the impact using the SVEST tool (second victim experience support tool), the results are measured before and 7 days after exposure.

Results & Discussion

70 professionals were recruited, 40 participated in the class and 30 in the simulation. 7 days after the simulation, a decrease in physical symptoms (mean 2.99 ± 1 vs. 2.74 ± 1 $p < 0.05$) and psychological symptoms (mean 3.87 ± 0.8 vs. 3.35 ± 0.8 $p < 0.05$), was observed. Peer support is recognized as the best help alternative with 95.8% agreement for the simulation group and 75.7% for the class group. We can conclude that clinical simulation generates a temporary impact on the phenomenon of second victims, which translates into a decrease in psychological and physical symptoms. Clinical simulation favors support mechanisms among co-workers.

Keywords

emergency medicine, second victims, SVEST, adverse events, patient safety, clinical simulation.

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SOCIETY FOR
SIMULATION IN EUROPE

Implementation of 3D printing in a simulation center: a 5-years overview of in-house pedagogical solutions

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Simulation applies theoretical notions through workshops imitating situations encountered in the clinical space, where technical and relational knowledge is mobilized according to the learner's level of experience[1] in a safe environment, using features that imitate the patient or part of his anatomy. Although the supply of simulation equipment is constantly increasing, it does not fully meet the demands of teachers and the educational requirements [2], [3] of certain clinical or surgical situations[4]. In another hand, the ethical limitation of access to human or animal anatomical samples and their related concerns bring up solution of dry lab facilities [5].

Methods

The implementation of a digital modelling and 3D printing chain for normal and pathological organs in the simulation department of the university. This industrial process is based on different 3D object modelling technologies, allowing the design of practically any type of geometry [2]. Based on medical imaging, the object is often an organ that can be pathological, or rendered as such, using computer-aided design (CAD) tools. These digital tools and additive processes (3D printing) shape these models using materials capable of mimicking the haptic rendering of biological tissue [3].

Results & Discussion

The results achieved after 5 years can be sorted into three categories: creation of new simulators, improvements of existing simulators and the production of consumables.

Two new simulators in otorhinolaryngology[6] and paediatric renal surgery[7] and have been designed and used by fellowship and continuing education to answer clinical concerns[8] and improve learning curve[9]. Their mid-terms pedagogical benefits are currently being assessed.

Two modules extending the life span of the manikin in gynecology and obstetrics have been patented to be integrated into mannequins in order to broaden the range of training (preterm birth and postpartum hemorrhage)

From an economical aspect, cost per consumables of suture/lumbar puncture skin pads have been divided by thirty using directed 3D printed parts or tools.

Versatility and agility of the digital chain makes it possible to experiment and evaluate the feasibility of patient education [10] or preoperative planning models.

These achievements are impossible without dedicated engineering staff and places to work in an interdisciplinary way around these iterative projects. That collaborative way of working demonstrate its efficiency during the COVID-19 pandemic when it made it possible to produce near 20000 spare parts and protective devices for healthcare workers[11],

[12].

Keywords

3D Printing, Engineering, Paediatrics, Surgery

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SOCIETY FOR
SIMULATION IN EUROPE

Implementation of medium-fidelity simulation in a Dutch anesthesia nursing educational curriculum based on the cognitive load theory

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

The four-year educational program for Dutch nurse anesthetists consists of a two-year theoretical based training component at a university of applied sciences, followed by a two-year internship on the department of anesthesia of a collaborating hospital. To prepare and improve performance among anesthesia nursing students for working in clinical practice, medium-fidelity simulation (MFS) sessions were created and implemented in the theoretical based training curriculum of the educational program. These sessions build toward high-fidelity simulation (HFS) training, in which students develop problem-solving skills based on clinical reasoning and clinical learning during acute and complex healthcare situations. The current study describes the development and implementation of the MFS curriculum.

Methods

To develop the MFS curriculum, a conceptual framework based on the cognitive load theory (CLT) was used. The development started with a clear description of the intended learning outcomes for the MFS based education curriculum. From this scope, the cognitive aspects were defined in agreement with students' individual characteristics. Taking into account the CLT, the choice of modality and environment of the simulation-based training was substantiated on foreknowledge and clinical experience of the target population. The application of HFS will increase the chance of cognitive overload, due to students' minimal level of clinical knowledge and exposure to clinical practice. An MFS curriculum in a semi-immersive environment, on the other hand, fits the cognitive needs of anesthesia nursing students more due to the minimum level of clinical experience. During the MFS sessions, standardized patients were used for the training and development of soft skills.

Results & Discussion

Insight to what extent simulation-based training matches the learning experiences of anesthesia nursing students will contribute to achieving the intended learning outcomes. Considering the CLT in a structured framework during the development and implementation of a simulation-based training curriculum for anesthesia nursing students will prevent cognitive overload during these training sessions. The implementation of a MFS educational curriculum integrates theoretical knowledge into practical skills and knowledge, to prepare anesthesia nursing students for working in a clinical environment in a safe and conditioned way.

Keywords

Medium-fidelity simulation; simulation design; cognitive load theory; nurse anesthetist; modality; learning and teaching

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Implementation of simulation as vertebrate axis of an integrative curriculum in Medicine Degree in Paraguay

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

In 2015 the Universidad del Pacífico (UP) (Paraguay), got involved into an innovative project to promote a curriculum transformation in medicine: from a Flexnerian perspective to an integrative curriculum supported by simulation. Despite simulation being widely implemented in most medical schools around the world, in Paraguay the training is still based on the paradigm of “see one do one” in the clinical setting - and simulation is just emerging.

Methods

First we have done an assessment on how a doctor is understood by the society, other doctors, institutions, employers and post graduates. With this information, we defined the graduate profile and competencies matrix. The implementation started in 2019. We included simulation as an vertebrate axis to promote integration in the curriculum. We developed a recurrent subject in all semesters from 1st to the 6th year called “Taller de Entrenamiento en Habilidades Médicas” (TEHM). During their initial training (1st to 3rd year) TEHM trains skills and clinical reasoning. In its 4th year, SimZone 2 collaborative simulation based on MOSAICO aims to train different clinical management entities (STEMI, asma, ACLS) and also a patient safety subject with Crisis Resource Management approach is being implemented. From the 5th to the 6th year, we are planning to implement SimZone 3, focused on communication, teamwork, and crisis management, in preparation for pre-professional internships.

Results & Discussion

The implementation of simulation as a vertebrate axis is possible and well received by the students and teachers. One of the main difficulties resides in faculty lack of skills once we have started with simulation in zone 2 and 3. To solve this issue, a faculty development program has been implemented with a mentor and monthly seminars. A 100h simulation postgraduate program has been also developed by the institution to train the trainers and maximise their competency. On the other hand, availability of spaces for developing the simulation scenarios has been detected as a problem, so the UP has invested and built a Simulation Hospital with six floors to cover the necessities.

Keywords

Clinical simulation, Medicine Students, Curriculum Development, SimZones, Skills training

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SOCIETY FOR
SIMULATION IN EUROPE

Importance of Including Theoretical Knowledge and Practical Skills in High-Fidelity Simulations

Format: Research Studies - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

Authors

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Introduction: Background, Context and Aims

The purpose of simulations in nursing education is to help nurses develop critical clinical skills prior to managing real patients. In September 2022, during the “Summer school: Simulation in nursing education”, the University of Maribor, Faculty of Health Sciences (Slovenia), in cooperation with the Ljubljana Community Health Centre, organised a low and high-fidelity simulation for undergraduate nursing students.

Methods

All participants signed informed consent. Three high-stress clinical scenarios were prepared: 1) adult advanced life support (ALS), 2) adult advanced trauma life support (ATLS), and 3) paediatric advanced life support (PALS). For collecting the data, we used the none validated 10-point Likert scale questionnaire before and after each simulation. The participants were asked to provide their level of stress, a sense of preparedness to perform scenarios, and how able they were to cope with the scenarios. All participants had prior knowledge and skills of adult ALS, and knowledge and training were provided for PALS as part of this study.

Results & Discussion

The participants were divided into four groups with one facilitator. Fourteen nurses and two medical students from Croatia (n=6), Slovenia (n=4), Lithuania (n=2), the Czech Republic (n=2), France (n=1) and Slovakia (n=1) were enrolled in the study. The majority were women with a mean age of 22.1±2.7 years. The students felt the most prepared to perform the scenario when they received theoretical knowledge and skills immediately prior to starting the high-fidelity simulation (Table 1; Scenario 1: M=6.2; SD=1.9 vs. Scenario 2: M=6.6; SD=2.4 vs. Scenario 3: M=7.4; SD=1.7). Despite preparation, the feeling of stress (Table 1; Scenario 1: M=7.9; SD=1.2 vs. Scenario 2: M=8.4; SD=1.1 vs. Scenario 3: M=8.7; SD=1.6) and coping with the scenario (Table 1; S1: M=5.6; SD=2.6 vs. Scenario 2: M=6.9; SD=2.2 vs. Scenario 3: M=7.1; SD=1.2) remained high. In all scenarios, we noticed the difference in the stress level, a sense of preparedness to perform scenarios and how they were to cope with the scenarios between the members and leaders. Providing students with skills and training prior to each simulation helped to reduce stress when they were in a high-stress clinical scenario. Low and high-fidelity simulation is critical for preparing nursing students to enter the field of nursing and clinical environments with less stress and a feeling of being more prepared.

Keywords

High-fidelity simulation, stress, education, students

References/Acknowledgements (Vancouver Citation style)

The authors thank all the students and colleagues who have participated in this study.

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SOCIETY FOR
SIMULATION IN EUROPE

Improving Sonographer-Patient Communication in a Diverse and Multicultural Environment through Role-Plays with Digital Humans.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Linda Zanin

Montgomery College

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Logosnet

Introduction: Background, Context and Aims

Good communication skills are essential for sonographers to build trust, to explain examination procedures to the patient in non technical-terms, to alleviate anxiety and gain patient consent and collaboration, to provide information at a pace suitable for the patient. In order to communicate effectively, the sonographer needs to be able to communicate empathetically, adjusting their communication style to meet the needs of different audiences. This is particularly challenging in case of work with a diverse and multicultural group of patients where the risk of misinterpretation is higher.

Methods

At Montgomery College, we are developing a training program that aims at boosting the sonographer's communication skills. Our students are provided with the opportunity to practice dialogues with virtual patients that are able to interact as real human beings, communicating concerns, emotions and moods both at a verbal and non-verbal level. We are using a solution known as "e-REAL" to deliver immersive glasses-free experiences, both on line and into a "phygital" classroom setting, that allow students to deal with different situations and different patients. Each student is trained about how to communicate in a realistic scenario, with patients that have different ages, gender, culture, ethnicity. At the end of each interview, timely feedback is provided highlighting the communication style, the quality of the listening and possible hidden bias in conversations.

Results & Discussion

Coaching through digital humans accelerates learning from experience without the risks associated with learning in the field. Early findings show that the program enhanced communication skills and self-awareness regarding their own relational styles depending on the diversity of their patients. Students showed a strong involvement in the training, appreciating the possibility to practice at their own pace, and the opportunity to deal with very different people learning how to adapt their communication style.

Keywords

Sonography - Effective Communication - Diversity - Inclusivity - Digital Humans

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

In situ patient-specific simulation of complex cardiac surgery: A simulation-based observational study with 3D heart models

Format: Research Studies - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

Authors

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Introduction: Background, Context and Aims

Low volume and high complex cardiac surgery such as resection of excess heart muscle (myectomy) has proven to be effective, yet, serious complications such as a ventricular septal defect, and complete heart block leading to pacemaker implantations may occur even for experienced surgeons.

In situ simulation-based practice before actual surgery might improve patient outcomes. As simulation and clinical practice becomes more and more intertwined, we aimed to develop and implement three-dimensional (3D) heart models in preoperative planning and training to improve pre-operative patient-specific anatomy insights and surgical technique in an observational study to ultimately improve surgical outcome.

Methods

Eight consecutive patients scheduled for surgical myectomy received cardiac Magnetic Resonance Imaging (MRI) based 3D-planning from September 2020 to August 2022. The dedicated cardiac MRI examination resulted in a high resolution 3D sequence of the heart and thoracic blood vessels. Models increased in complexity over time from a) an in silico anatomical model, to b) 3D-printed septal myectomy planning, to c) pre-operative in situ surgical practice on a silicone model, and to d) intraoperative assessment of actual heart muscle resection compared to pre-operative planning. The models were also used for patient consultation and surgical informed consent. Our small sample size was deemed too small for quantitative analysis of patient outcomes.

Results & Discussion

An in silico 3D anatomical model of the heart with height map is visualised in Figure 1a. Thickened heart tissue exceeding 15 mm was printed in red for visual guidance of surgical resection (Figure 1b). In situ simulated resection of excess heart tissue was simulated on the silicone model one day before the actual surgery (Figure 1c), and allowed for adjustment of the planned resection. The pre-operative surgical plan and actual resected myocardial tissue volume and size were compared intraoperatively (Figure 1d).

Since introduction of the patient-specific models, surgeons feel better prepared, more confident, and feel better

supported making pre- and intra-operative decisions. Additionally, patients feel better informed about the actual procedure during outpatient consultation.

In situ patient-specific simulation of complex cardiac surgery has become regular surgical practice in our hospital. It is recommended to implement and evaluate the presented workflow in other cardio-thoracic surgery centres, and for other disciplines to demonstrate improvement in patient outcomes.

Keywords

High Fidelity Simulation Training; Heart surgery; Three-Dimensional Imaging; Just-in-time simulation

References/Acknowledgements (Vancouver Citation style)

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In-Situ Simulation – the Practical Way to Implement a New System of Detecting Latent Safety Threats

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Introduction: Background, Context and Aims

A latent safety threat (LST) is generally a dormant error of healthcare providers' organization, equipment, or competencies, which usually manifests in association with risk factors like time pressure, stress, exhaustion, lack of staff, etc. Since LST is a systemic issue, it can repeatedly occur whenever the system is exposed to increased demands. The result can be a lower quality of care, patient safety issues, or even injury. It should be the effort of healthcare management to minimize it.

In-situ simulation (happens at the place of actual healthcare) can strengthen teamwork and the discovery of possible LSTs besides individual training of soft and hard skills. However, it is still not used very often due to equipment transport issues and the workplace's complex organization.

For above mentioned reasons we developed a system of LST detection based on in-situ simulations.

Methods

Management of all potentially cooperating departments had been informed about the possibility of in-situ simulations. Over a few years, a number of in-situ simulations took place in five different departments. The process has been gradually developed, consisting of meetings and dialogue (about possibilities and expectations) with department management, and checking the environment and equipment at the simulation workplace.

On that basis, the scenarios were created and enacted as agreed. All noticed LSTs during the simulation were thoroughly described on the form by the instructors.

Debriefings were another source of LSTs. All systemic threads discovered in the debriefing were recorded to the form. Subsequent synthesis of the instructors' and participants' LSTs was drawn to the final report. To maintain a safe environment, all participants' comments were anonymized. From all the findings, suggestions for management on how to improve work procedures were put forward.

Results & Discussion

Although the advantages of in-situ simulations are well-known, they are rarely performed. Our newly established In-Situ simulation program discovered several LSTs in various departments. One LST repeatedly appeared at more departments, thus suggesting a safety gap at the hospital system level. The safety report containing detected LSTs and recommendations on their removal was sent back to the department's management in case of interest. This presented system could contribute to LST detection and improve patient safety.

Keywords

latent safety threads, safety gaps, in-situ, report, system

References/Acknowledgements (Vancouver Citation style)

N/A



SOCIETY FOR
SIMULATION IN EUROPE

Increasing the flexibility of virtual reality-based medical simulation training through dynamically reconfigurable patient and scenario states: Virtual Manikins

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Virtual reality medical simulation training (VRMST) is a fast-growing modality for training and maintaining knowledge, skills, and abilities (KSAs) across various health professions. This growth is partly driven by several benefits over manikin-based simulation training (MBST), including lower acquisition and sustainment costs, increased portability with reduced set-up times, and unique opportunities for psychoenvironmental immersion. Recent advances in VRMST technology have resolved many prior limitations to adoption and use, but some common barriers remain. One common limitation is the provision of fixed scenarios with inflexible state flows, critical actions, and learning objectives. Though fixed scenarios can provide benefits through simplifying moderation and reduced preplanning time, they also can prevent educators from dynamically varying a simulation to adjust to the performance and training level of a specific group of trainees. Additionally, fixed scenarios can suffer from limited reusability, as trainees may recognize specific cues and features from memory on subsequent attempts rather than relying on clinical judgment.

In this work, we addressed this limitation by creating a new VRMST simulation capability that enables educators to dynamically reconfigure elements of patient physiology and the global simulation state to overcome the limitations of fixed virtual scenarios.

Methods

An interprofessional research working group was formed to determine the project's goals, objectives, and clinical requirements. This working group included clinical educators, VR simulationists, and VR engineers. Based on these findings, a set of implementation concepts was finalized using iterative refinement. A set of technical specifications was then created, describing adaptations to a commercially available VRMST system (VRMSS, SimX, Inc.). An iterative process was again used to refine the implemented adaptations until the working group assessed that the implemented functionality met project objectives.

Results & Discussion

The working group determined the following high-level plans for the capability: 1) dynamic scenarios should be focused on undifferentiated chief complaints (i.e. chest pain, community traumatic injury), 2) there should be no indicators to trainees as to the underlying diagnosis other than through clinical assessments, 3) moderators should be free during execution to select and modify lab results, vital signs, and other clinical findings in order to represent different

underlying pathologies, and should be able to change findings dynamically during the scenario, 4) a variety of patients and environments should be selectable at runtime to eliminate non-clinical cues, and 5) moderators should be able to take on the role of non-player characters within the scenario at will. Based on these high-level plans, detailed specifications were created, and the required adaptations were implemented within the commercial system. After iterative refinement, the resulting capability was assessed to meet requirements by the working group. The result of the project was a novel capability for dynamic VRMST execution. Based on the project's success, several projects for further work are now in process, including an expansion of chief complaints represented and an exploration of approaches to simplify moderation of the dynamic scenarios.

Keywords

virtual reality, medical simulation training, flexibility, dynamic, technology

References/Acknowledgements (Vancouver Citation style)

The authors acknowledge funding for this project from the United States Air Force and SimX, Inc.

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SOCIETY FOR
SIMULATION IN EUROPE

Independent evaluation of the ‘Talking Together’ simulation communication training for ‘goals of patient care’ conversations – A mixed methods study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

Introduction: Recognising the importance of providing training in communication skills, particularly around goals of patient care (GOPC) conversations, a pilot communication training programme (‘Talking Together’) was developed by clinicians in the East Metropolitan Health Service in Perth, Western Australia in partnership with Cancer Council Western Australia. The training used a patient-centred communication framework and role play scenarios with trained actors as patients/carers. The aim of the training was to improve clinicians’ communication skills when having challenging conversations with patients, or their carers, in relation to GOPC in the event of clinical deterioration. Eight half-day workshops were delivered in 2020 to a total of 59 doctors, primarily working in the emergency department, acute medical unit and ICU. The pilot demonstrated participant satisfaction with the training and improved confidence in engaging in GOPC conversations. Subsequently, funding has been awarded to enable systematic delivery and evaluation of the clinical simulation training program across other health and hospital services in Perth, Western Australia. Program delivery commenced in July 2021 with a targeted workshop for ICU staff at a large metropolitan hospital. Over three years, a total of 52 half-day workshops will be delivered to over 400 staff.

Methods

Methods: Researchers from Curtin University and St John of God Midland Public and Private Hospitals, also in Perth, Western Australia, are independently conducting a multi-site, longitudinal mixed methods study to evaluate the impact of the communication skills training program. The study is assessing outcomes in three areas: workshop evaluation; quality of GOPC conversations; and investigation of the nursing/allied role in GOPC.

Results & Discussion

Results and discussion: This presentation will briefly describe the published study protocol and detail the results available at the time of the presentation. Reflecting the study protocol (Brown et al, 2022), the presentation will describe

detailed program evaluation data including effect on satisfaction and confidence; preliminary data describing the integration of best practice into clinical care; and preliminary data describing the quality of conversations from the perspective of patients and carers. Although other studies have assessed the effectiveness of communication skills training based on clinician self-report or documentation assessment, this study will add to the evidence by assessing changes in clinician communication skills in a half-day simulation environment.

Keywords

communication skills; goals of patient care; simulation; program evaluation; mixed methods

References/Acknowledgements (Vancouver Citation style)

Brown, J. A., Myers, H., Eng, D., Kilshaw, L., Abraham, J., Buchanan, G., Eggimann, L., & Kelly, M. (2022). Evaluation of the 'Talking Together' simulation communication training for 'goals of patient care' conversations: a mixed-methods study in five metropolitan public hospitals in Western Australia. *BMJ Open*, 12(8).

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The authors would like to thank Emily Allen for her contribution to earlier stages of this work and for assistance with the development of the evaluation tools.



SOCIETY FOR
SIMULATION IN EUROPE

Innovative pedagogy: Using virtual reality simulation to develop communication and soft skills for healthcare and social work students

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Therapeutic uses of Simulation

Authors

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Introduction: Background, Context and Aims

Introduction:

In higher education, students are supposed to develop the skills required for their professional careers. In the last decade, innovations in educational programmes have emphasised and stimulated such developments through simulations. This project aims to meet the educational needs of healthcare and social work students to develop the required communication and soft skills through virtual reality (VR) simulation. This descriptive work is part of a larger interprofessional project (Solstien 3 - AKTIV-2019/10162) funded by the Norwegian Directorate for Higher Education and Skills.

Methods

Description:

Four 360° movies were developed for students to watch on VR headsets for an immersive experience. The scripts for these movies were based on students' inputs on situations and emotions they found demanding in clinical practice. To exemplify, we briefly outlined the main content in two of the videos, where the observer is a student who enters their patient's/client's living facilities with a supervisor. Video 1 shows a follow-up visit to a refugee family involving the father's mental health; the father gets angry because of a letter received from their child's kindergarten. Video 2 portrays a woman with autism and insufficient speech, who resides at a municipal housing association. She potters around in the living room, where one of her neighbours with an intellectual disability is also present. A disagreement ensues between the two individuals, which the observer is unable to resolve. The woman becomes increasingly frustrated and stressed, which leads to repeated self-harm.

The full VR simulation consists of a short brief, watching a 360° movie and a facilitator-led debrief in groups of 5–8 students.

Illustration from the project

Results & Discussion

Discussion:

Our research shows that well-implemented VR technologies can successfully provide engaging learning activities and

interactive simulations. Indeed, VR simulation for training healthcare and social work students in soft skills, e.g. teamwork and communication, is a promising approach.

The outcome of our project builds on the following research findings. The students engaged greatly in the learning activities. They reported feeling present as a professional in the situations: «It feels very alive». Moreover, they reported how the group-based debriefing provided them with opportunities for self-reflection through facilitated discussion in the group.

Keywords

Innovative pedagogy, virtual reality simulation, communication, soft skills, health care students, social work students

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SOCIETY FOR
SIMULATION IN EUROPE

Institutionalizing an Interprofessional Simulation Education Program in a single Oxfordshire Emergency Department.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Simulations have been shown to improve clinical practice¹; they offer an environment whereby complex real-world situations can safely be practised facilitating learning through immersion, reflection and feedback².

There has been an increasing awareness amongst the medical profession as to the importance of simulation, we therefore created a sustainable simulation programme for the multi-disciplinary team (MDT) at the Horton General Hospital (HGH) Emergency Department (ED) – Oxford University Hospitals NHS Foundation Trust.

Methods

The simulations were designed utilising feedback forms as well as analysing information from clinical incident forms. These provided a platform to understand areas of improvement and targeted scenarios were created. A weekly simulation programme was then created involving the ED MDT (doctors, nurses, allied healthcare professionals) as well as other specialities (Paediatrics, Trauma & Orthopaedics, Anaesthetics and Acute General Medicine); the session was run every week for 2 hours in the emergency department as “in-situ” to provide a higher level of fidelity and provide an immersive environment for the participants. These scenarios were then debriefed by senior members of the team including speciality registrars and consultants trained on debriefing and human factors. The debriefs involved the discussion of human factors pertaining to the simulations and were learner-led. The feedback from the MDT was grossly positive; nursing staff and healthcare professionals felt more empowered after the sessions to raise concern. Feedback was collected using an online survey which was sent to the participants following the session. Feedback obtained from participants aided improvement of targeted learning points and therefore aided debriefing. Simulations were designed in blocks of 8 weeks each block, 2 hrs for a week e.g. 8 weeks of trauma, 8 weeks of airway management and Rapid sequence induction 8 weeks of acute adult presentations, POCUS ultrasound simulations been introduced as the new RCEM curriculum e.g., cardiac USS, shock ultrasound - Fascia Iliac block and Iv access USS guide. The focus of the simulations was based on identifying errors due to human factors.

Results & Discussion

Our simulation programme has been run over 22 months, 168 hrs with approximately 1176 participants over this period and has had excellent feedback. After finished each block audits and Quality Improvement project has been performed. We continue to improve our simulations and increase the participant numbers using teams video links for the sessions. Standard Operation Procedure has been created and is on intranet in our Trust.

Keywords

Inter- professional simulation program for Emergency Department clinicians. Oxford University Hospital NSH Foundation Trust.

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SOCIETY FOR
SIMULATION IN EUROPE

Interdisciplinary mental health training takes centre stage! Feasibility study adapting a forum theatre simulation framework

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Mental health crisis assessments are complex, involving a range of professionals including General Practitioners (GPs), social workers, police officers, paramedics and psychiatrists. These assessments necessitate high-level communication skills, interdisciplinary team-working and confidence in making complex decisions. This process is emotionally challenging and can have profound lasting impact. It is therefore concerning that many professionals suggest current training structures do not adequately prepare them for real life assessments. There is an acute need for interdisciplinary simulation training akin to real-life assessments.(1) We were keen to explore if forum theatre methodology, which is an arts-based intervention, could be adapted and used as an interdisciplinary, simulation-based education method for this crisis assessment. Our objective was to assess the feasibility of delivering this simulation training and to assess participants' acceptability of this teaching approach and evaluation design.

Methods

We designed and delivered two half-day simulation, training workshops as part of a feasibility study. We conducted this research in line with the Medical Research Council's framework for developing and evaluating complex interventions.(2) Our simulation framework was an adaptation of forum theatre methodology. Each workshop commenced with a pre-scripted anti-model play depicting a mental health crisis in the community. GP trainees, approved social worker trainees and the police were invited to attend one of these sessions. Participants completed pre and post-event questionnaires and attended one of eight focus group sessions. There was personal and public involvement in all aspects of this research.

Results & Discussion

Participants (n=68) included approved social worker trainees (n=27), GP trainees (n=22) and police officers (N=19). Quantitative and qualitative data both supported that this learning approach and evaluative methods employed were feasible and acceptable to participants. All participants rated the teaching experience as 'good' or above. The majority of participants (n=38) rated the teaching experience 'excellent'. All participants (n=66) would recommend the teaching approach to a colleague and the majority (n=57) rated this teaching approach as better than their previous training

experiences. Qualitative analysis is ongoing and results will be presented at the conference.

Feedback was universally positive and this feasibility phase of our research has generated areas for further development of this learning approach. This work serves as a foundation for the development of a meaningful, interdisciplinary, educational approach. It also serves to deepen our understanding of the feasibility and practicalities associated with teaching at this exciting intersection between simulation and the arts.

Keywords

Primary Care; Mental Health; Training

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Interprofessional clinical reasoning simulation: Student and faculty perspectives

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Clinical reasoning is a key concept comprising different areas to be taught and developed within health professions education. It encompasses a broad range of skills which happen both individual and within multidisciplinary teams (MDTs). An immersive team based simulation provides health professions students with the opportunity to practice and develop these skills within a safe environment before reflecting together in a facilitated debrief.

Methods

We developed an immersive interprofessional (IP) clinical reasoning simulation course, which takes place within a simulated acute medical receiving ward. The simulated patients have a variety of non-emergency issues, with specific clinical reasoning learning outcomes for each patient.

The team comprised a medical, nursing, physiotherapy and pre-registration or student pharmacist, who worked together within the simulated environment. The learners received a handover and entered the ward for 30 minutes. The team decided how to prioritise tasks and deal with situations that arose. Two facilitators from different professional backgrounds observed via the video/audio system. Following the simulation, the student's handed back to the facilitators and participated in a 45-minute team debrief using the PEARLS model. Eight courses were run over 3 days, with 32 students attending in total.

Feedback was collected through a questionnaire given to all participant pre course, immediately and 3 months post course post course. The questionnaire was adapted from Roth's developing the reflective practitioner and included white space questions focusing on clinical reasoning and IP education. Student and facilitators were invited to attend focus groups following the completion of the course.

Results & Discussion

The quantitative data from the questionnaires' is currently being analysed. Initial thematic analysis of immediate post course questionnaire question asking the most useful aspects of the experience highlighted the main themes of MDT working, decision making, the debrief as an opportunity for reflection and preparation for qualification. The transcripts from the student and faculty focus groups are currently being analysed and the data will be presented. This triangulation provides both student and facilitator perspective.

This course fills a gap within the current curriculums, allowing IP education to take place within a simulated clinical environment. Learners develop their skills both individually and within an MDT within a safe space, before having the opportunity to reflect on this in the debrief. These results can help us understand the experiences of both students and faculty to develop IP simulation to reflect the needs of health care professionals.

Keywords

Clinical Reasoning, Interprofessional, Team based simulation, Student perspective, Faculty perspective

References/Acknowledgements (Vancouver Citation style)

We would like to thank the Scottish Medical Education Research Consortium for their research grant which was awarded in order to carry out this study.



SOCIETY FOR
SIMULATION IN EUROPE

Interprofessional difficult airway training – a PrepaCareXR solution

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Virtual simulation has been in the spotlight since the disruption in workplace learning associated with the COVID-19 pandemic. It offers opportunities for different degrees of engagement, immersion, and interactions, without requiring in-person gatherings^{1,2}. However, as a teaching strategy it is most effective when integrated into a curriculum with other learning activities, not isolated but as part of the learning process^{3,4}.

We present an interprofessional training with several teaching modalities, from VR to in situ simulation. That was developed based on a needs assessment analysis, based on interviews with nurses, doctors, and technicians working at the Emergency Room (ER) focused on what critical situation they felt the need for interprofessional training and identifying the constraints that prevent that training.

Methods

We developed a difficult airway curriculum based on the needs perceived by the ER workforce. Four modules were developed targeting different essential components of a difficult airway approach. Pre-course reading materials are shared including the difficult airway management protocol and Crisis Resource Management (CRM) theoretical principles. The first module addresses the knowledge of the difficult airway cart and its devices. A VR solution was developed in a sterile virtual room with an interactive mirrored ER difficult airway cart where participants have pictures of real devices and their usage descriptions. In-scenario assessment is performed after full interaction with the cart and repetition can be performed until proficiency. The second module encompasses an interactive screen-based video of a team managing a difficult airway. Critical thinking is required to navigate the case following the protocol. Feedback is provided at all critical decisions and a user report is provided at the end. The third module focus on team communication where all participants engage in a virtual ER with a difficult airway patient. A facilitator provides guidance throughout the process as needed focusing on the CRM principles. The fourth module is an in-situ simulation in the ER with a multiprofessional team, aggregating all knowledge and experiences acquired during the previous modules. A team debriefing is facilitated after the experience.

Results & Discussion

The unanticipated difficult airway is a critical and complex clinical situation that requires clinical judgment, team communication, planning, knowledge of the equipment, and training. The use of simulation-based education improves the team's performance in this clinical situation⁵. However, to better prepare the multiprofessional team that attends these patients, a curriculum with learning activities that address knowledge gaps and different learning methods should

be used in the educational process⁶. Our curriculum, which is based on a needs assessment, and addresses gaps from different professionals of the clinical team, can potentially have a positive impact and a better educational outcome regarding the unanticipated difficult airway management.

Keywords

virtual reality, interprofessional education, difficult airway, curriculum development

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Interprofessional identity predicting interprofessional performance: simulation-based research

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Hierarchy between professions can hamper productivity and even jeopardize patient safety. A shared identity moderates the relationship between team diversity and team performance. However, not every professional works in a permanent team and not every team identity might be interprofessional. Interprofessional collaboration aims at achieving optimal patient outcomes based on jointly solving problems. An interprofessional identity could overcome the disadvantages of team identity but little is known about its predictive nature. Simulation is a safe way to investigate this construct before its ecological validity can be tested in clinical practice. Since identity is triggered by a relevant context, a simulation should be a sufficient representation of the practice context. Interprofessional identity in the practice context is considered a long-term motivation for interprofessional performance. Therefore, a higher interprofessional identity should be associated with higher interprofessional performance. This simulation-based study aims to investigate interprofessional identity as a predictor of interprofessional performance independent of team building and prior training.

Methods

Participants of this double-blind study were 47 dentistry and 41 dental hygiene students (86.3% response). Interprofessional identity was measured with an extended professional identity scale (EPIS) 8 weeks prior to the start of a simulation. Group productivity was used as an expression of motivation intensity and equal communication as an expression of motivation towards interprofessional collaboration. Based on the mean EPIS scores, students were assigned to a group condition: low versus high interprofessional identity. Subsequently, 12 multidisciplinary groups (4-5 members) were composed per group condition. Each group received eight problems (questions regarding role clarity, cooperation, legislation, and establishing a team practice). A minimum of 6 and a maximum of 10 solutions for each problem was expected. Group productivity was based on the percentage of solutions per problem. Equal communication was based on the number of group members expressing equal behaviors.

Results & Discussion

The mean difference between groups with low versus high interprofessional identity was 0.5 (3.4; SD=0.5, respectively) and 3.9; SD=0.4; $t=-5.880$, $df=86$, $p<0.001$. Groups with a high mean interprofessional identity were more productive in generating solutions than other groups (91.5% versus 86.4%), $t(86)=-2,938$, $p=0.004$. Groups with a high mean

interprofessional identity showed more equal communication, $t(86)=-2.160$, $p=0.034$. Interprofessional identity is a long-term motivation towards interprofessional performance. Future research should investigate predictors of interprofessional identity formation in simulations before investigating its impact on practice and its relationship with clinical outcomes. In addition, the interplay between professional identity and interprofessional identity is unknown.

Keywords

Interprofessional collaboration, interprofessional identity, performance, predictive validity

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Introducing the 4S conceptual model in surgical training

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

Authors

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Introduction: Background, Context and Aims

Surgical training is moving from an apprenticeship to a competency-based model. Efficient training programs are needed to enhance competence, while maintaining patient safety. A “conceptual model” is a descriptive model of a system based on qualitative assumptions about its elements, their interrelationships, and system boundaries, and we propose a 4S model within surgical training.

Methods

The established learning theory of Kolbs learning cycle [1] was used as a theoretical framework for this surgical training model – and a tautogram was created to make the model easier to remember.

As surgical and operative approach vary considerably across surgeons, hospitals, and regions – so does surgical quality and patient outcomes [2]. Using evidence-based surgery as a basis for standardization could minimize the procedural variation. Standardizing surgical procedures to minimize procedural variation could involve breaking the procedure into discrete key steps (i.e. deconstruction of task [5]) – and by that creating a template for each surgical procedure.

Simulation-based training gives the opportunity to train in a structured environment that does not compromise patient safety and allows educators to recreate experiences that encourage deliberate practice, assessment, and feedback.

The clinical environment is challenging for both the learner and the educator. Time is limited, and the main focus of surgical practice is the patient – and the patient’s interests and needs will predominate over a focus on education and training. Because of this it is important to make the best use of learning theories in order to obtain structured training. Observing the performance and behaviour of a trainer as a role model, reflecting in and on action, and feedback on performance are important education principles to implement in teaching and learning in clinical settings [6].

The further one moves along the curve of difficulty, the less availability of procedures and the larger the demand for dedicated training [7]. Innovative mastery learning outside the operating room, video based coaching techniques and prospective reporting of patient data and outcome using standardized definitions have proven efficient in the most demanding laparoscopic surgery – pancreatic resections [8]. These techniques should be more widespread adopted in order to squeeze the juice in surgical training – for all surgeons and on all difficulty levels.

Results & Discussion

The ultimate goal of surgical education and training is to obtain clinically competent and technically apt surgeons – without compromising patient safety. The 4S conceptual model for surgical training suggests using standardization, simulation, structured training and squeezing the juice to achieve this.

Keywords

Surgical training

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SOCIETY FOR
SIMULATION IN EUROPE

Investigating the barriers and enablers for doctors in training to transfer a growth mindset into the clinical environment.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

Novel interventions are required to tackle the unprecedented levels of professional burnout for doctors in training. Adopting a Growth Mindset (GM) in comparison to a Fixed Mindset (FM), encourages learners to embrace challenge, persist in the face of adversity and learn from mistakes. (1) These outcomes are essential not only to reduce levels of professional burnout, but to develop lifelong learners. GM is the belief that qualities such as intellect are dynamic and can be strengthened over time with intentional and repeated use. FM is the belief that qualities are predetermined at birth and remain static throughout life (1). Interventions are effective in teaching GM, (2, 3) however, if the learning environment is not supportive of a GM, learners receive no improved outcomes compared to non-GM intervention learners. (3, 4) This study aimed to determine the barriers and enablers for doctors in training to transfer a GM into the clinical environment.

Methods

We recruited Oncology Registrars and Clinical Fellows to receive a GM intervention at least six weeks before a Tabletop Simulation Exercise (TTE) Focus Group. In groups of 6-8, trainees attended the TTE Focus Group to discuss scenarios where a GM could be applied, such as following a chemotherapy prescribing error. The facilitator asked trainees to simulate their approach to the clinical scenario, and then explored the perceived barriers and enablers to transferring a GM in the scenario, using semi-structured questions based on the scenario content. The sessions were recorded, transcribed verbatim, anonymized and then analyzed using template analysis, (5) with Burke and Hutchin's transfer factors forming the initial coding template. Burke and Hutchins' review of training transfer highlights five factors that determine if new learning will be transferred into the workplace: opportunity to perform, supervisor/peer support, strategic link, transfer climate, and accountability. (6)

Results & Discussion

The five transfer factors were all found to be significant in relation to the ability of trainees to maintain (and foster) a GM in the clinical environment. The importance of supervisor and peer support was particularly prominent. This project used a novel modality, a TTE Focus Group, to allow richer investigation of the research topic. Allowing participants to simulate the application of a GM to a realistic clinical scenario allowed deeper exploration of their perspectives by anchoring to a concrete simulated experience. The identification of barriers and enablers to applying a GM in the clinical environment has provided recommendations for maintenance of a GM for doctors in training.

Keywords

Growth Mindset, Tabletop Simulation Exercise, Oncology

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SOCIETY FOR
SIMULATION IN EUROPE

Investigation of a Virtual Reality Simulation Education Program for Nursing Students

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

Most health professional pre-registration courses are now making use of simulation-based education (SBE) as a preferred and evidence-based method to educate students(1). Simulation is applied in this context by using either a mannikin or a trained actor to simulate a range of roles. These simulations have been highly successful, but not always scalable with only 10-20% of students actively participating in an immersive simulation. The ability to provide increased opportunities for students to be involved in authentic work-based learning experiences is integral for students to become effective and competent practitioners. Virtual Reality (VR), as an innovative and emerging technology, has the potential to offer increased numbers of students with a fully immersive experience.

JasperVR and its associated software application VirtualU was developed through a collaborative consortium as a unique VR platform specifically designed to expose students to the different and complex situations they are likely to face in their future professional work. Using 360 degree-video and sound technology, JasperVR captured the variations and potential outcomes from common clinical scenarios such as the verbally aggressive person, the deteriorating patient, the cognitively impaired patient and the patient in need of palliative and end of life care.

The aim of the research study was to investigate the outcomes of the JasperVR virtual reality simulation education program for vocational and higher education nursing students.

Methods

Using a mixed methods quasi-experimental design the study compared educational outcomes from traditional SBE with JasperVR. Data was collected via surveys across three time points. The research involved a convenience sample of all consenting students enrolled in a Bachelor and Diploma of Nursing.

Results & Discussion

There were 675 participating students, from the aggregation of seven distinct teaching cohorts with 282 students in the SBE Control group and 393 in the JasperVR Intervention Group. Significantly ($p < 0.01$) more students in the JasperVR intervention group (95%) actively participated in the VR scenarios than in scenarios using traditional SBE (15%). Most students in the JasperVR intervention group had statistically significant higher knowledge scores; and self-reported scores for knowledge, motivation, preparedness for practice and confidence than the SBE control group, regardless of student status, age, course, module and cohort ($p < 0.05$ or $p < 0.01$ level). Students in the JasperVR intervention group rated the program more highly as a learning experience than students in the SBE control group. JasperVR enabled increased numbers of students to actively participate in an immersive simulated learning environment at their own pace, and in their own time and venue.

Keywords

virtual reality, simulation innovation, nursing education,

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SOCIETY FOR
SIMULATION IN EUROPE

Leaders' experiences of working to embed simulation-based education in a teaching hospital: An interview study informed by Normalisation Process Theory

Format: Research Studies - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

There is an extensive body of research demonstrating efficacy of simulation in healthcare to teach practical skills, human factor skills and teamwork with emerging evidence to demonstrate that this translates to patient outcomes. However, there is limited research on the experiences of people in working to embed and sustain, or normalise, simulation programs. The purpose of this study was to determine the experiences of simulation leaders/experts in how they sought to embedding a simulation-based education (SBE) program and/or centre in a teaching hospital.

Methods

This interview-based study explored experts' experiences of how to embed a sustainable SBE program and/or centre in a teaching hospital. Known experts across Australia and North America were recruited. Fourteen participants (10 Australian, 1 Canadian, 3 United states) were included. The semi-structured interviews were analysed using reflexive thematic analysis (Braun and Clark) sensitised by Normalisation Process Theory (Murray et al), an implementation science theory. A number of meetings with the full research team (RS, EM, JF, DS) were conducted to discuss codes, sub-themes and themes. There was a heightened focus on the relational features that influence decision-making of simulation leaders, buy in and uptake, such that what started as a discrete program, centre or service, becomes part of normal hospital practice. The remaining data set was coded by RS and meetings were held at fortnightly intervals to discuss differences in interpretation.

Results & Discussion

Interlinked themes represented how experts experienced the process of normalisation of simulation-based education within the hospital. Themes included the following. Engagement of people, The "sell" and executive 'buy-in', perceptions of the epistemic stances within sub-cultures within the organisation, Research as a wheel for legitimacy, the agency and social capital of the simulation program service leader and evolution of a program.

Perceptions of the epistemic traditions of 'sub-cultures' within the hospital (not just discipline cultures but operational groups like education and management and quality and safety) influenced decisions about 'who to play with', including governance structures. The discourse of 'survival' was strong, and in such cases, it illuminated that normalisation of SBE was still a goal, rather than a reality. In the embedding stage of normalisation the concept of 'start-up' and a charismatic leader were significant as was the feature of leadership or influence without authority where simulation leaders influenced change throughout organisations without necessarily having direct authority to do so. Further research phases will determine how these findings support or detract from sustaining simulation towards normalisation.

Keywords

simulation-based education, sustainability, normalisation, leadership, change management, implementation

References/Acknowledgements (Vancouver Citation style)

Acknowledgement to all participants and those involved in this work including Margaret Bearman and Robert O'Brien.
Acknowledgement and thank you to Professor Carl May for his time and input via email clarifying details on Normalisation Process Theory (NPT).

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SOCIETY FOR
SIMULATION IN EUROPE

Learning experiences with high-fidelity simulation in a Dutch anesthesia nursing educational curriculum

Format: Research Studies - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

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Introduction: Background, Context and Aims

Modern healthcare offer complex and advanced treatment for patients, wherefore highly competent and skilled healthcare providers are needed. A strategy to improve performance among nurse anesthetists is high-fidelity simulation (HFS) training during their educational program. HFS aims to integrate theoretical knowledge into practical knowledge to help trainees develop problem-solving skills. HFS consists primarily of realistic simulation scenarios in which trainees manage acute events, followed by detailed debriefing sessions in which the principles of crew-resource management (CRM) are covered. This study aimed to quantify the learning experience of nursing anesthesia students with HFS during their educational curriculum.

Methods

A mixed methods, longitudinal design was used to assess nurse anesthetist students' learning experience with HFS during their educational program. In total, 12 HFS sessions were created in which all students participated on voluntary base. Data collection started in 2020, based on the Satisfaction with Simulation Experience Scale (SSES) questionnaire. The SSES is a multidimensional 18-item scale based on the topics debriefing and reflection, clinical reasoning, and clinical learning, that were scored by the participants on an 11-point numeric rating scale (NRS). Measurements were performed during three moments in the educational program: (T1) baseline measurements were made after the first simulation session took place; (T2) an interim analysis was performed after six simulation sessions; and (T3) final measurements were made when all twelve simulation sessions were performed. Statistical analyses were performed and P-values were calculated to compare outcomes on the different moments.

Results & Discussion

The SSES questionnaire was completed 37, 23 and 20 times on T1, T2 and T3, respectively. Participants scored their learning experience with HFS a 6.50 ± 0.31 on T1, which increased to 6.94 ± 0.31 on T2 ($t=8.68$, $P<.001$). On T3, participants scored their learning experience with a 7.36 ± 0.23 ($t=22.92$, $P<.001$). Outcomes on the components of CRM during the different moments are represented in Figure 1. All participants recorded both clinical reasoning and clinical learning as most valuable aspects of HFS during their educational program. This study showed that nurse anesthetist students' learning experience with HFS increases when the number of sessions performed increases. HFS gave participants the opportunity to learn on all components of CRM and provided an added value to their education on both clinical reasoning and clinical learning. The results of this study improved understanding on how nurse anesthetist students value HFS, offering input to facilitate learning and to design more effective HFS sessions.

Keywords

High-fidelity simulation; crew-resource management; nurse anesthetist; education; learning experiences

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SOCIETY FOR
SIMULATION IN EUROPE

Lessons Learned from Designing On-boarding Simulations with Standardized/Simulated Patients for a New Children's Mental Health Hospital

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Introduction: Background, Context and Aims

Process and systems-oriented simulations to onboard staff and test new healthcare facilities are growing and expanding. For the opening of a new 60-bed regional in-patient mental health hospital for children, a need to examine safety issues and to train staff in daily processes and procedures was critical. Because of the focus on high stakes communication and de-escalation identified as key for this patient population, simulation incorporating Standardized/Simulated Patients (SPs) was identified to achieve the goals. The objectives of the onsite simulations prior to its opening were to familiarize the staff with the new facility, to train staff in the new methods, procedures, and systems, and to test the physical facility itself for system and technology integration and patient safety.

Methods

During the planning, two SP educators met with the new hospital leadership team over the course of several months to develop 6 individual process simulations, including admission, assistance, elopement, group skills, parent interactions, and discharge. Then a simulation that represented a compressed shift (A-Day-in-the-Life (ADIL)) simulation was designed to incorporate the components of a typical day, from getting patients up, moving them through breakfast, morning community meetings, coach led groups, lunch and medication distribution, play deck, and visiting hours at the end of the day.

To maintain best practices in physical and psychological safety, all pediatric and adolescent patients in these scenarios were portrayed by adult SPs specifically trained in the patient profiles developed with the simulation scenarios. All simulations were conducted in-situ in different spaces in the hospital a month prior to the scheduled opening and were comprised of approximately 80 staff members, including MDs, nurses, coaches, therapists, and security. Divided among groups of 10-12, all participants first went through the individual session simulations across four days. The ADIL scenarios ran on two different floors, with an 8-hour day compressed into four hours for the purposes of the simulations. All the simulations included debrief sessions, facilitated either by a senior hospital staff member or a SP Educator.

Results & Discussion

The participants and hospital leadership reported that the simulations were successful in achieving the objectives established and helped all staff feel more comfortable when the facility opened for patients. Several safety concerns, and systems and procedural issues were identified.

Lessons learned from the development process, training the SPs, facilitating the debriefing sessions, communication with the staff not familiar with SP simulations, and logistical and organizational considerations of the in-situ simulations will be shared.

Keywords

mental health, in -situ, standardized/simulated patient, onboarding, simulation,new healthcare facilities, patient safety

References/Acknowledgements (Vancouver Citation style)

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With Acknowledgment to the Children's Pavilion Leadership Team



SOCIETY FOR
SIMULATION IN EUROPE

Life-support training course development for the civilian population and medical staff during the ongoing war in Ukraine

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

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Introduction: Background, Context and Aims

War beginning in Ukraine become a huge emerging healthcare challenge and correspondingly a challenge for medical education and simulation. Within a short period, we had to completely change priorities in simulation training. Existing training for first emergency care and basic life support does not meet the needs of the population and medical staff when a constant threat of explosions and military traumas exists.

Methods

Centre of Simulation Medicine and Innovative Learning Technologies (COSMIT) of Bukovinian State Medical University (BSMU), Chernivtsi, Ukraine working since 2018, from the first week of the war started receiving many requests from the population, healthcare institutions, local authorities, and local defense force offices to conduct training on emergency care and life support in case of an explosion and military traumas. During the first 7 months of the war, we trained over 3000 people of different categories. The training program was constantly updated based on feedback and reports from the front line. Since April 2022 COSMIT team started cooperation with the Simulation Centre of the University of Toledo. Based on this cooperation an updated and adapted to the National Healthcare system training course for the “first on the scene” categories was developed and successfully conducted for the 400 police officers of the Chernivtsi region.

Results & Discussion

The simulation training culture in Ukraine is in the stage of fast development. The training in tactical medicine for officers became more and more relevant in recent years [1]. Military medicine is a unique niche of healthcare [2] and requires a multidimensional and multidisciplinary approach. Developing and implementing simulation training courses of emergency care in case of military trauma and explosions for different categories of trainees today is an extremely relevant task in Ukraine. However, it has many challenges as the absence of a unified approach to trauma care at all levels in Ukraine as the ATLS course approach [3]; supply deficiency and low-quality not certified or self-made supply and equipment; lack of experience in military and explosive trauma care in physicians; lack of experienced and certified trainers.

The main further perspective for our Center is to develop an adapted and updated advanced military and explosive trauma life support course for Ukrainian physicians; develop a unified National approach to trauma support in the country.

Keywords

Emergency care, trauma life support

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Long case scenario: a new software for Internal medicine Simulation

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Life in the ward for a young doctor is not easy: not only there are many real patients to take care of but also medical records to file and bureaucracy, colleagues and consultants to deal with. In this context simulation, very useful in emergency scenarios, can only help a little, as a week-long multi-patient ward shift can be hard to implement as a high-fidelity simulation. Only few of the simulation software available on the market have been designed with internal or clinical medicine in mind, and they still are missing some features such as attending more than one patient at the same time or therapy driven multi-day scenario development. At the Department of Medicine of the University of Padova we developed a software to help medical students and residents to learn how to deal with a shift in the internal medicine ward.

Methods

Our goal was to create a software that lets young students experiment Internal medicine in a deeper and more realistic way. The software is a web application, usable both on pc or mobile, with an interface mainly text-based, that lets students experiment with professional actions and materials, following the evolution of one or more patients by reading medical report printouts and clinical diaries and act by writing clinical diary entries, filling forms, filing medical charts and prescribing therapy, all through forms and documents resembling real ones. The scenario evolves in a turn-based style, led by the teacher who decides the response to clinical investigation, the evolution of the disease and the response to the therapeutic actions; this leaves maximum freedom to the student's choices and their effects. The software can also postpone the responses, allowing for the cases, typically lasting a few days, to be run at a realistic or speed-up pace. The scenario can take place both in situ and at home, little groups of students can interchange themselves in the management of the cases during 24h like in real life ward shifts.

Results & Discussion

We tested the software administering 3 scenarios lasting 3 days each to three pair of students. All students were enthusiastic and reported that this new mode of practicing is both useful and challenging, underlining its value as a learning tool. Our software supports a new type of simulation, and we plan to test it with increasing numbers of students and with different modes, to investigate more precisely its potential and its limits.

Keywords

Internal medicine, Clinical medicine, Computer simulation, high fidelity simulation

References/Acknowledgements (Vancouver Citation style)

none



SOCIETY FOR
SIMULATION IN EUROPE

Mass Casualty Event Simulation - how to keep it simple?

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

Mass Casualty Events (MASCAL Event) are the real preparedness and capability test for all systems of care across the world. The importance of preparing medical personnel for treating more than one patient in a time is crucial. Lack of specialist, difficulties in getting into the scene of event or weather condition can make it almost impossible to provide proper treatment. As a postgraduate simulation center we are more than aware of huge need of filling this gap of skills.

Methods

As a response for needs listed above we design a two-day simulation course for medical personnel, firefighters, police officers and other services which are included into a process of coping with such an event. In last 3 years we conduct almost 10 edition of "MASCAL Course" with more than 300 participant included. Every course consist 6 high fidelity simulations of different events e.g. car accidents, railway incidents, active shooter, fire traps or acts of terror. During the events all services had an opportunity to manage with difficulties in real time and were convinced to use CRM skills to avoid errors.

Results & Discussion

After each edition of course we discuss pro and cons in our instructor team. During the 'debriefing for instructors' we were trying to talk how maximise reality of simulation and still keep it simple in a context of goals established for every simulated event. Between every edition changes was made e.g. rearrangement of scene environment, establishing instructor responsibility for each simulation, changing or improving scenarios list. We would like to share our experience in such a difficult and complex simulation to help others make their simulation better.

Keywords

Simulation, Mass Casualty Event, Emergency Medicine

References/Acknowledgements (Vancouver Citation style)

Prehospital Interventions During Mass-Casualty Events in Afghanistan: A Case Analysis
DOI:10.1017/S1049023X17006422

EMS Mass Casualty Triage In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan. 2022 Aug 8.

Intuitive versus Algorithmic Triage DOI: 10.1017/S1049023X18000626

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Mass Casualty Incident Simulation: A Qualitative Structured Analysis of Leadership and Organizational Processes in the Hierarchical Structures of Medical First Response

Format: Research Studies - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

Authors

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Introduction: Background, Context and Aims

Mass Casualty Incidents (MCI) are non-linear, complex [1]. They require advanced medical support, which deviates from routines and standards for first responders. Simulations of MCI are therefore used as a method to prepare for the modifications in daily work structures to meet these challenges [2, 3, 4, 5]. To better understand the flow of activity and the priorities arising in MCIs, a qualitative approach was established to observe behavioral patterns of first responders in MCI simulations.

Methods

A semi-structured observations were analyzed by means of a structured content analysis. MCI simulations consisting of different first responders in three experimental simulation environments were analyzed. Similarities between behavioral markers that are not structurally attributable to environmental and social cues were identified. The aim of the simulations was to organize rapid treatment and transport of simulation patients.

Trained observers noted their observations in a predefined form. These transcripts were limited to process-oriented milestones (e.g., transportation of the first patient to the clinic) and positive or negative social interaction (e.g., decision-making). The data was then coded and processed with the help of a structured content analysis [6]. The results of the interpretation of spatial dynamics of all subjects were validated against GPS motion data of simulation patients and first responders [7].

Results & Discussion

The evaluation showed a strong correlation between the behaviors predefined in concepts and the associated subordination of independent teams (e.g., EMS teams) in hierarchically-led systems [2, 3]. In addition to these expected patterns, a phase of 'order' emerges during the simulations, which focuses on a linearization of the highly complex situations. This linearity runs through the structures anchored in concepts such as first-aid, triage, treatment and transportation. This finding is confirmed by a GPS motion analysis [7]. Hereby, movements of first responders show the same order of constraint in the form of clusters of simulation patients and the first responders assigned to them. It was therefore observed that the rapid transport of simulation patients takes a secondary role in favor of an order constraint. Argumentatively, it can be claimed that, with increasing complexity, the linearity of steps for sustainable treatment must be increased. Nevertheless, this observation raises the question of up to what level of detail a structural linearization of organizational processes is efficient in MCI.

Keywords

Mass Casualty Incident, simulation, first responder, decision making

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SOCIETY FOR
SIMULATION IN EUROPE

Medical Students' Reflections on Patient Safety Module

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

Reducing the harm caused by healthcare services is a global priority. Medical students should be able to recognize unsafe conditions, systematically report errors and near misses, investigate and improve such systems with a full understanding of human fallibility, and explain errors to patients. In order to achieve this, it is emphasized that the subject of patient safety should be included in the curriculum of medical students. In this study, the researchers aimed to reveal 5th year students opinions of XXX University Faculty of Medicine on the 2-week structured 'Patient Safety Module' within the context of their clinical observations, experiences and the structure of module by reflection sessions.

Methods

During the 2022-2023 academic year, the 'Patient Safety Module', which is an elective module within 5th year curriculum, will be offered to different students in 4 separate rotations. In the first rotation instructed in October, 2022, 12 5th year students voluntarily participated in the module. During the module, 5 trainers and 6 peer trainers took some responsibilities. Many educational methods such as: lectures, role-plays, standardized patient, OSCEs, debriefings, case discussions, etc. were used. In addition, reflection sessions were planned at the end of each week in the module to enable students to reflect on their previous clinical observations and experiences, and on their experiences during module in the context of patient safety. Reflection sessions were held in a room where video and sound recordings were taken, and the students were informed. Participation in reflection sessions is on a voluntary basis. The content analysis of the reflection sessions will be conducted by the researchers using Creswell's content analysis approach.

Results & Discussion

In the first rotation, 9 of 12 students attended the reflection session. The session was directed by SA, one of the researchers, and the content analysis of the interview was done by all researchers. The contents that emerged in the reflection sessions held in the first rotation were presented in two separate groups. The first group of data is 'reflections on the module in the context of clinical experiences', and the second group is 'the effects of module design on the concept of patient safety'. The themes classified in firsts group are; emotions, clinical climate, team dynamics, non-internalized practices. The themes classified in the second group are; internalization, the use of appropriate methods, and its relationship with professional competencies. The data revealed by reflection sessions in the module will be analyzed in each rotation during the 2022-2023 academic year. Thus, the data might be enable the patient safety module to be included in the curriculum for all students rather than elective participants. Reflection sessions within the scope of the study will continue throughout the year.

Keywords

patient safety, reflection, simulation, standardized patient, undergraduate medical education

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SOCIETY FOR
SIMULATION IN EUROPE

Medical digital twins for assessment of fitness to fly in commercial intercontinental space flight

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

Commercial intercontinental flights via space, for example, Sydney - London in 2 hours, are technically feasible. Due to absence of friction, sub-orbital trajectories are both fast and efficient. A renewable propellant: hydrazine, is available. Medical challenges, however, are significant. The new space travelers are not selected, young, healthy, well trained professional astronauts, but "regular" passengers, potentially with age and life-style related chronic conditions. We propose to develop tools that can assist healthcare providers assess the fitness to fly of prospective passengers.

Methods

Our initial work targets longer space flights [1], but has in common with the present project that a well validated model of cardiopulmonary physiology will be used to assist in the assessment of fitness to fly. To transform such a model into a true "medical digital twin" of the traveler, model parameter estimation is critical. We propose to study the relative performance of three parameter estimation techniques:

- Traditional system identification [2].
- Machine learning methods [3].
- An explanatory modeling approach, where an experienced clinician adapts the model to the subject [4].

Convergence on the specific (patho)physiology of the individual traveler is critical. Flight conditions can then be simulated. Simulation results can be interpreted by a qualified clinician and discussed with the prospective traveler.

Results & Discussion

Modeling and simulation should be able to inform fitness to fly considerations for new space travelers. The above outlined work proposes to combine the concept of a model-based medical digital twin with an optimal parameter estimation method and simulations of flight conditions.

Keywords

medical digital twins, space medicine, model, parameter estimation

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SOCIETY FOR
SIMULATION IN EUROPE

Medical students' perceptions and experiences on improving communication, interaction and empathy skills working with drama-based exercises in a workshop

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

Graduating medical students are expected to be able to apply their knowledge and skills competently and ethically. The Finnish national learning outcomes of graduating physicians were published in 2020. There are competences listed under areas of professional values and actions, professional skills, and professional knowledge. The outcomes mention patient safety and quality, interprofessional cooperation, tolerating uncertainty and complex working situations, and well-being. Graduating medical student should be able to communicate clearly and effectively, listen and share thoughts, and show empathy and compassion [1].

In healthcare, professional interaction skills are needed not only in patient contacts but also when working in interprofessional teams. Team members have different backgrounds, and they might have different understanding of how to work together. This underlines the importance of clear communication and teamwork [2]. Communication plays an important part in developing collaboration in teams and in the development of interprofessional empathetic relationships [3].

Since communication and interaction skills play an important role not only in patient care and teamwork between healthcare professionals but also in well-being, it is necessary for medical students to practice these valuable skills.

Methods

There is strong evidence on the positive role of the arts in improving health and well-being. A review conducted by the World Health Organization summarizes evidence from more than 900 studies. Healthcare professional's clinical skills, personal skills and communication skills can be improved by using arts as pedagogical method [4].

The workshop with drama-based exercises is designed for medical students in the clinical phase of the studies. The aim is to add medical students' interaction knowledge and skills. The workshop consists of contact and presence exercises that focus on teamwork communication skills and practicing presence. Pre-prepared exercises are done in a group, all together. Between exercises there are reflective discussions. The discussions are linked through students' experiences to teamwork interaction, communication skills, and presence, related to patient safety and empathy in healthcare.

This workshop is designed for master's thesis research that will be conducted beginning of 2023. The purpose is to study medical students' perceptions and experiences on improving communication and interaction skills working with drama-based exercises in a workshop. Research data collection consists of observations made during the workshop and post-workshop questionnaires. Observation during the workshops will be carried out by using evidence-based model Observation model for creative group activities [5].

Results & Discussion

Expected impact is that the workshop with drama-based exercises fosters teamwork and communication skills and evokes thoughts about empathy and the meaning of professional presence. In addition, the students experience well-being through relaxation and joy. The students' own experiences might evoke them to think about lived experience of the person, not only the body, when working with patients.

Keywords

Medical students, interaction skills, presence

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SOCIETY FOR
SIMULATION IN EUROPE

Mental Wellbeing update for Pharmacists: Mental Health Simulation Training for Pharmacists

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Pharmacists based in both General Practice (GP) surgeries and community pharmacies are likely to interact with patients with mental health conditions on a regular basis and will often identify new mental health related issues. They can play a crucial role in the early identification of signs and symptoms of poor mental health, as well as safe management of medication use for mental health service users [1]. The “Mental Wellbeing Update for Pharmacists” course is designed to give pharmacists confidence, knowledge and skills in interacting, assessing and managing patients with mental health conditions. The course has been adapted from a previous course run for both GPs and pharmacists.

Methods

The Pharmacy Simulation Course is a full day virtual course which will be delivered 4 times between November 2022 and February 2023 to 9-12 participants for each session, all of whom will be pharmacists working in a variety of settings. The learning objectives will include increasing confidence in identifying and exploring signs of mental health needs, understanding how reduced wellbeing interacts with the early onset of mental health issues and the levels at which intervention can occur, supporting people in improving mental wellbeing including signposting and considering support systems in place as well as how to assess risk and seek appropriate support.

The introduction will include an explanation of simulation and its ethos in addition to an ice breaker in order to establish psychological safety. Simulated scenarios will then be run based on the following themes; self harm, health anxiety, domestic violence, alcohol misuse, work-related stress and burn-out, insomnia and schizophrenia. The Modified Pendleton’s method will then be used to facilitate a debrief discussion.

The course will be evaluated using pre and post course questionnaires accessed via a link with a mix of validated scales and open questions to measure confidence in the learning objective related skills.

Results & Discussion

The results will be available from March 2023 and will be shared and discussed in the full presentation. We envision that the findings of this course will provide novel insights into the application of simulation training to improve mental health competencies in the pharmacy workforce.

Keywords

Mental health; pharmacy

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Modified-Mastery Learning in Edinburgh: Translational impact beyond the Lab

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Simulation-based mastery learning (SBML) is an evidence-based methodology that enhances the acquisition of procedural skills while standardising learners' educational outcomes. Translational outcomes in clinical care and healthcare systems have been evidenced, predominantly in USA-based learner groups (1). NHS Lothian's Modified-Mastery methodology was designed to enhance our learners' experience of SBML and facilitate the expansion of the programme while delivering similar performance outcomes (2). SBML has been traditionally offered to doctors on direct training pathways but in recent years there has been an expansion in other professional groups that may be expected to perform a variety of clinical procedures. The aim of this study is to explore this heterogeneous learner group's clinical experiences following return to real-life practice after achieving mastery-based competency in a simulated environment.

Methods

Within NHS Lothian, these roles may include Advanced Nurse Practitioners (ANPs), Physician Associates (PAs), Advanced Critical Care Practitioners (ACCPs). In many departments, doctors not on direct training pathways (Clinical Fellows) and the above groups of colleagues become more permanent team members, playing crucial roles in the delivery of clinical care. Therefore, to ensure a consistent standard is met in each procedural skill, SBML sessions have been opened to these diverse postgraduate learners.

A sample of recent participants derived from the representative groups have been contacted with an electronic survey. Questions were designed to understand how, since attending a SBML session and achieving sim-based competency, this has impacted on their clinical behaviour; with specific reference to what opportunities the learners have had to practice, how these opportunities went, and how what they learned in SBML has impacted on their practice either directly or indirectly.

Results & Discussion

The translation of the skills learned during SBML to the clinical environment has been studied within doctors in training pathways, as have the barriers to achieving this (3,4). However, there is limited insight into how other professional groups utilise the technical and non-technical skills learned in the mastery lab environment in their own clinical environments. It is anticipated that these data will inform ongoing iteration of our learning process and translational

pathways. Data collection is currently ongoing and a combination of quantitative and qualitative data, relating to the themes above, will be available at the time of presentation.

Keywords

Interprofessional education, mastery skills

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SOCIETY FOR
SIMULATION IN EUROPE

Movement correlation and segmentation of mass casualty incident simulations

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Mass Casualty Incidents (MCI) involve a wide variety of events in which the number of casualties exceeds the capacities of local health care organizations [1]. Although these events are rare, preparedness is of great importance and requires regular training. The quality and efficacy of MCI simulations are important, but the methods to monitor parameters, such as the arrival times of rescuers, the duration of triage, and debriefing criteria, are not standardized [2]. In this work we examine the hypothesis, that the analysis of movement data can be used for a segmentation of the chronological sequence of events during an MCI simulation and that it can be used to provide standardized parameters for the assessment of such simulations.

Methods

Global Positioning System (GPS) data loggers were used to collect movement data of simulation patients (SPs), medics and paramedics during three MCI simulations. The data were related to the roles of the participants and their trajectories were analyzed using self-developed software [3]. The site of operation was modelled by a polygon on a map and trajectories were correlated and tested as potential triggers for defined events like the entry or exit of specific characters. During the simulations independent observers noted the behavior of all subjects, which allowed the GPS analysis to be verified.

Results & Discussion

The independent observations validated predicted events, supporting the hypothesis that motion data can be used to create a standardized segmentation of the chronological sequence of MCI simulations (See figure). The arrival of actors with important roles, such as the leading medical officer or the transport organization officer were confirmed to be important triggering events. For example, they were strongly related to the initiation of patient transport to hospital. The times to transport patients to the hospital were demonstrated to be measurable by relating their GPS positions to predefined areas on the map.

Some limitations to the possibilities of data collection were noted. In particular, simulations that are not announced to the participants beforehand preclude the collection of all trajectories due to tracker acceptance ethics.

The methods developed in this work demonstrate a novel use of GPS data loggers which can allow standardized parameters to be defined and measured. Such standardized analysis can be used to compare simulations of different organizations and how they develop over time.

Keywords

mass casualty incident, simulation, Movement patterns, Correlation, Segmentation

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SOCIETY FOR
SIMULATION IN EUROPE

Multidisciplinary high-fidelity simulation of palliative medicine scenarios: Engaging, equipping and inspiring medical students

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

The Association for Palliative Medicine's curriculum for undergraduate medical education specifies that students should be able to demonstrate knowledge, skills and attitudes related to palliative care, including assessment and management of palliative patients[1]. Some critical situations in palliative medicine are rarely encountered by students, and the COVID-19 pandemic further impacted student exposure to hospice environments due to patient vulnerability. Within such clinical teaching constraints, a palliative medicine simulation day was developed to recreate challenging end of life scenarios in safe and reliable ways, supporting the preparedness of final year medical students to face these as Foundation Doctors.

Methods

A multidisciplinary simulation group of palliative medicine consultants, specialty trainees and specialist nurses was formed. Topics for scenario-based simulation were discussed and agreed. Four complex clinical scenarios on opioid toxicity, dyspnoea, constipation and terminal agitation were developed. Group members received direction on simulation facilitation, including debriefing techniques. The scenarios were trialled with volunteer students and faculty. This led to greater flexibility within facilitator materials, inclusion of a key focus within each brief, and implementation of double (repeat) simulation. The scenarios were delivered using high quality manikins on a simulated hospital ward. Eighteen final year students attended this optional day over six weeks between November 2021 and January 2022.

Results & Discussion

This is the first high-fidelity manikin scenario-based simulation experience for medical students in Northern Ireland dedicated to palliative medicine. Students and facilitators provided excellent feedback. Students described the experience as engaging, well-paced and inspiring. In qualitative feedback, students identified the benefits of small-group learning, expert facilitation, receiving feedback, repeat simulation, and exposure to life-like scenarios. Facilitators witnessed student progress in understanding and application of palliative care principles. Facilitators found that debriefing enhanced learning as students could explore complex and emotive topics like resuscitation, engage in reflection and debate, and receive expert guidance in a safe and supportive environment. Students also demonstrated development of non-technical skills including leadership, problem-solving and communication by repetition of scenarios, which subsequently enhanced confidence and retention.

Students suggested their experience could be improved by incorporating interprofessional learning, recognising the importance of multidisciplinary collaboration in palliative care. It was suggested that relevance to Foundation practice

could be built upon if held closer to graduation. Students also requested implementation into core curriculum, reflecting the enjoyment and utility of the day. The simulation group is committed to expanding delivery of undergraduate simulation during the next academic year.

Keywords

Palliative medicine

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Multiprofessional simulation training to prevent the risk of clinical deterioration and to improve teamwork and communication, supported by augmented intelligence: The Vigilance Project

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Regarding the latest evidence that remarks the risk of a higher morbimortality rate due to the lack of a standardised screening and escalation guidance of acute patients admitted in the hospital wards. The Hospital Clínic of Barcelona considered to developed a transversal project that aims to improve the detection and response of patients' clinical deterioration – Vigilance Project (VP).

A patient surveillance system supported by augmented intelligence was designed – ClinScreen■ – in order to automatically measure different scoring systems as NEWS2■. It also assists healthcare professionals (HP) to monitor and analyse certain clinical parameters from the electronic patient records and provides clinical information that guides escalation. VP empowers each HP to escalate according to the clinical judgement and the ClinScreen■ analysis results, which entails the need of effective teamwork and communication skills. Considering the novelty of the two main axes, the project's development team identified the need to design a simulation-based multiprofessional educational program to prepare the HP for its implementation.

Methods

The educational program was divided into two phases: 7hours – e-learning approach; 7hours – simulation-based approach. The e-learning phase prompts the acknowledgment of the project, their characteristics, the tools and procedures with videos of experts and interactive activities – knows and knows how. Subsequently, the simulation-based approach is entitled to practise the technical and non-technical skills addressed in the previous phase with clinical cases – demonstration of learning.

A total of 500 HP from 16 wards (309 beds) with different roles/specialities were invited to join the first edition of the educational program.

The simulation-based approach includes the initial enrolment of three SimZone 1 scenarios: SBAR and multiprofessional communication; ClinScreen■ and NEWS2■; ABCDE clinical assessment. Considering the objectives of these simulation

scenarios, rapid cycle deliberate-practice has been elected as the main instructional strategy. Afterwards, three clinical case-scenarios were designed (SimZone 2) to simultaneously apply the contents previously developed: a dynamic plus/delta educational approach was adopted.

Results & Discussion

The simulation training facilitates the implementation of a complex and novel patient surveillance system that might have a significant impact in the clinical safety and quality of care. Feedback was received and analysed from the HP and supports the opportunity to adjust and improve the protocol with their recommendations.

Nevertheless, through this simulation-based approach, there is a new possibility to assess the actual needs of the HP in the clinical setting, promoting the analysis of active safety and educational gaps that the institution might need to consider.

Keywords

Multiprofessional education; Teamwork; Communication; Clinical deterioration; Augmented Intelligence;

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SOCIETY FOR
SIMULATION IN EUROPE

NeoSim: A Multiprofessional Clinical Education, Quality Improvement Initiative.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

The COVID-19 pandemic has obliterated all signs of normality in healthcare and medical education, forcing Educators to review the delivery of teaching. Awareness of this prompted the development of a new learning platform that is accessible and relevant to all members of the Neonatal Multidisciplinary team (MDT).

Aims:

- Create a collaborative learning network to promote shared learning from an interprofessional MDT.
- Use simple technology to enhance learning through an easily accessible, inclusive, and socially distanced format.
- Increase diversity and inclusion of clinical education within the MDT.
- Enhance knowledge and understanding of other professional roles and aims in neonatal care, promoting a holistic approach to patient care.

Methods

The significant benefits of collaborative working and shared learning is not new philosophy, but a well proven fact. The delivery of interprofessional training leads to improved team-working by facilitating a better understanding of other team members perspectives, alongside increasing staff motivation and morale.

An awareness of the importance of collaborative learning led to the creation of Neosim, an interprofessional, educational team. The aim of the group was to create a bank of evidence based, quality assured and peer reviewed educational videos. We began by surveying all members of the team for their most desired topics, to ensure our content was relevant to staff need. The categories ranged from practical procedures and equipment tutorials to disease management and guideline reviews. A YouTube channel was then created to make the content easily accessible to the neonatal network across Northern Ireland.

Results & Discussion

The educational videos are a unique, fun, and informative resource that anyone with a neonatal interest can access at any time, from any location. The videos have also been used to aid regional teaching, practical courses and medical and nursing staff inductions, with excellent feedback received.

Over 30 videos have been created to date, with more in production and the list of future topics continuing to grow. The project would not be possible without the fantastic contribution from our nursing, midwifery, physiotherapy, occupational therapy, dietetics, pharmacology, critical care technologists and medical teams. Following their creation, the videos are reviewed and published by our local MDT. Through helpful feedback and ongoing submission of ideas, future clips will be created using a PDSA cycle. Moving forward we plan to increase our collaboration of shared learning regionally amongst trusts in Northern Ireland and nationally with other paediatric schools in the UK.

Keywords

Neonatology, Medical Education

References/Acknowledgements (Vancouver Citation style)

Bernard O'Donnell, BHSCCT videographer.



SOCIETY FOR
SIMULATION IN EUROPE

Non-technical skills - human factor in emergencies. Training plan of the Emergency Medical Service of Madrid (SUMMA112)

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

SUMMA112 healthcare personnel (1800 professionals) are required by law to renew their competency certification every three years. For this reason, the training department has to offer a plan for the acquisition and maintenance of professional competence. The number of professionals and the time available led us to consider developing a course in which the student participates as an observer of simulated situations, a proposal that other authors have legitimised for use.

We detected the need for training and implementation of non-technical skills (HnT) related to the human factor that have an impact on quality and patient safety. The objective of this communication is to present the course designed, "Importance of the human factor in the emergency department".

Methods

Using clinical simulation, a 10-hour hybrid course (streaming and face-to-face) was designed, divided into three blocks.

1.- 2.5 h. streaming. The aim was to create a safe learning environment, in which expectations were assessed and rules of respect and confidentiality were agreed. They discovered the HnTs that can put patient safety at risk. The student visualised their perception of teamwork, using the Mayo scale.

2.- 5 h. face-to-face. 1 week later. Through dynamics and problem videos, the student tried to solve the problems that generate the possible lack of competence in HnT, looking for solutions to implement in their professional development. They evaluated the quality of the debriefing with DASH.

3.- 2,5 h. streaming. 1 month later. The commitments that the participant acquired in the second block were explored, and the Mayo scale was filled in, as a second snapshot of their perception. An evaluation was made of the knowledge acquired and also a survey of satisfaction with the course.

The final evaluation of the course explores the learner's satisfaction, the knowledge acquired and the behavioural change experienced.

Results & Discussion

The participants in the satisfaction survey gave an overall rating of 4.7/5, considered it useful for their work 6.7/7 and met their expectations 6.6/7.

We conclude that there is a need to include this type of training in out-of-hospital emergency teams. Further research is needed on the professional development that can be achieved and the influence this can have on the safety of our patients and the professionals themselves.

Keywords

Simulation; Patient safety; Non technical skills, Crisis resource management; Debriefing; Emergency Medical Services

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SOCIETY FOR
SIMULATION IN EUROPE

Off to a good start; bridging the gap between university and clinical practice

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

At Stavanger University Hospital, thirty first year residents (FY1) enter the resident program biannually. The hospital has established an induction program in order to prepare the residents for practice, which since 2017 has been regularly evaluated and revised. Prior to the introduction of the induction program, the residents were put to work the first day they arrived, either on-call or on the wards, not taking into account their lack of previous work experience or lack of familiarity at the hospital.

Methods

The current ten-day induction program for FY1s includes three days of simulation based learning activities. One of these days is dedicated to Advanced Cardiac Life Support (ACLS) training. The two remaining days consist of twelve simulations, six each day. The overarching learning goals are recognizing a deteriorating patient through the use of National early warning scale (NEWS), as well as following up by calling for help by the use of ISBAR (communication with a more experienced resident), and systematic use of ABC examinations, including reevaluation. Each simulation also has a medical learning objective relevant for the specific scenario, designed to correlate with a nationally defined clinical learning objective required during FY1 clinical practice.

The facilitators are experienced residents or consultants in different specialties. During each simulation scenario, one resident performs as a doctor, while the other residents observe. Second year paramedic students act as simulated patients, while nurses from various hospital departments attend the scenarios.

Results & Discussion

The simulations and debriefs provide a valuable setting for clarifying what is expected of the residents, as they enable an immediate analytic discussion with peers, experienced residents and nurses, and paramedics. Following each day of simulation, the residents complete a survey evaluating each of the scenarios. The results indicate that the residents are pleased with simulation as a method of learning and preparing for residency. The residents also reported that the simulation days made them more comfortable in their role, understanding how and when to call for help, and made them more aware of their own limitations.

While the planned SBL curriculum aimed to increase clinical competence for first year residents, the simulation days seem to serve as an additional hidden curriculum, as described above. The residents experience increased social belonging within their group and among established colleagues, as well as a sense of self-efficacy/security. However, more information is needed on the effects the learning has on the residents' clinical practice.

Keywords

Residency, simulation

References/Acknowledgements (Vancouver Citation style)

None



SOCIETY FOR
SIMULATION IN EUROPE

Office Hours Training for Emergency Medicine Residents

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Resident physicians training in Emergency Medicine (EM) are expected to learn how to treat various injuries and illnesses and to perform a wide range of procedures to stabilize patients. But given the rarity of some procedures and time constraints associated with residency training, opportunities to get individualized feedback in a controlled setting is often scarce. We instituted a program called Office Hours that gave residents a chance to work on specific procedures or cases at our simulation center in a structured 1-to-1 setting.

Methods

Office Hours was a program structured as a 1-on-1 session between an EM resident learner and a simulation-trained EM faculty physician. Residents were informed of the program at the beginning of the academic year. EM residents were encouraged to contact an EM faculty member to schedule a 1-hour session with a specific request on a procedure or clinical topic. Each session was focused on the EM resident's request of either 1) a procedure (central line placement, intubation, etc) that will be done on an available task trainer or 2) a clinical topic (resuscitation, crisis resource management) that would be run as a simulation case with an available high-fidelity manikin. For a procedure-based Office Hours, faculty focused on covering procedure-specific indications, contraindications and step-by-step approach utilizing rapid cycle deliberate practice. For clinical topic-based Office Hours, faculty formulated a case (or two) specific to the topic with learning objectives targeted towards the resident's needs with a subsequent debriefing discussion. Each resident was given a pre- and post-session survey regarding that session's efficacy as well as their confidence level at performing their requested procedure or dealing with their requested clinical topic.

Results & Discussion

This program allowed our residents to have a focused training session that was specific to their individual needs in a controlled and deliberate setting. By limiting the multiple external stimuli often associated with working in the emergency department, our resident learners were able to effectively hone their skills sets under the direction of an experienced instructor. Our resident surveys showed improvement in both knowledge acquisition and confidence after participating in Office Hours. This program effectively highlighted the components that support the Adult Learning Theory including self-concept, readiness, and motivation to learn. Our program was successful among our EM residents that we are now a consistent supplement to our residency program's education curriculum.



SOCIETY FOR
SIMULATION IN EUROPE

Online versus face-to-face simulated patients : comparison of perceptions of Physiotherapy students

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Covid-19 pandemic caused disruptions in services, growth of alternative forms of delivery, namely emergency remote teaching, teleconsultation and adoption of teleconsultation simulation replacing face-to-face consultation simulation. Engagement is relevant to learning and realism perception a contributing factor to this engagement. This study assesses Physiotherapy students' perceptions on ongoing learning process (LP), performance of simulated patients (SP) in simulated consultation and compares online and face-to-face

Methods

Student's perceptions were collected after teleconsultation (Mo) and face-to-face consultation (Mp) through a two-part online questionnaire focusing on the relationship of simulation experience with LP and SP's performance, consisting respectively of 11 and 8 questions of a 4 level Likert scale ranging. 71 and 67 first year Physiotherapy students' answers were collected respectively in Mo and Mp. Ethics committee approved questionnaire. Participants gave informed consent. Results are described with mean values and standard deviation. Kolmogorov-Smirnov showed all items followed a normal distribution, and a T-test for paired samples was performed to compare responses between moments. Confidence interval 95%.

Results & Discussion

Questionnaire results.

Question: 1 (Mo Mean 3.84 ± 0.37 - Mp Mean 3.78 ± 0.42 ; $p=0.372$); 2 (3.87 ± 0.38 - 3.7 ± 0.58 ; $p=0.033$); 3 (3.80 ± 0.40 - 3.64 ± 0.48 ; $p=0.006$); 4 (3.65 ± 0.51 - 3.52 ± 0.53 ; $p=0.096$); 5 (3.34 ± 0.81 - 3.4 ± 0.60 ; $p=0.904$); 6 (2.24 ± 0.46 - 2.40 ± 0.49 ; $p=0.033$); 7 (1.87 ± 0.75 - 1.99 ± 0.79 ; $p=0.284$); 8 (2.73 ± 0.91 - 2.75 ± 0.97 ; $p=0.805$); 9 (3.4 ± 0.88 - 3.6 ± 0.5 ; $p=0.38$); 10 (3.06 ± 0.73 - 2.97 ± 0.76 ; $p=0.296$); 11 (2.75 ± 0.89 - 2.97 ± 0.76 ; $p=0.072$); 12 (3.46 ± 0.61 - 3.28 ± 0.69 ; $p=0.175$); 13 (3.53 ± 0.58 - 3.38 ± 0.76 ; $p=0.049$); 14 (3.49 ± 0.61 - 3.11 ± 0.73 ; $p<0.001$); 15 (1.93 ± 0.92 - 1.83 ± 0.93 ; $p=0.835$); 16 (1.80 ± 0.81 - 1.74 ± 0.80 ; $p=0.684$); 17 (3.14 ± 0.67 - 3.15 ± 0.69 ; $p=1$); 18 (3.33 ± 0.56 - 3.17 ± 0.60 ; $p=0.124$); 19 (2.19 ± 0.79 - 2.35 ± 0.87 ; $p=0.248$).

Students consider both formats relevant, properly framed in-line and articulated with other learning opportunities, perceived as "real" and relatively easy. Time/opportunities of preparation insufficient. SPs were perceived as positive, credible, consistent, mastering and providing accurate information. Nonverbal language consistent with the portrayed case the same with verbal language. SPs looking as were acting was an unexpected and unexplainable inconsistency. In five items significant differences were found related to the degree, not to the trend of agreement with the statements

Keywords

Clinical specialty: Physiotherapy Keywords: Face-to-Face consultation Teleconsultation, Students perceptions, Simulated patient

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SOCIETY FOR
SIMULATION IN EUROPE

Opportunities and challenges of using simulation technology and wearables for skill assessment

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Virtual reality (VR) simulators and wearables offer opportunities for more objective and timely feedback on skill acquisition. They are promising tools for real-time performance assessment at the level of the individual and the team. VR simulators and wearables allow for fine-grained analyses of patterns in performance and continuous monitoring of learning processes. For example, specific performance measures can be used to monitor and predict trainees' learning curves for open and minimally invasive surgery skills. Critical moments in team interactions can be identified by detecting physiological changes or speech features with wearables. However, much is still unknown about using and combining these technologies with traditional measures like expert judgment. Our goal is to clarify the opportunities and challenges of using technology for individual and team skill assessment by presenting our experiences with using these tools in various settings.

Methods

We present key technologies and their (dis)advantages for performance assessment of various skills, including VR simulators, motion sensors, sociometric badges, and physiological data sensors. We show applications of these technologies for 1) examining individual differences in learning curves of basic laparoscopic skills, 2) team interactions and effectiveness during a simulated advanced life support scenario, and 3) assessing smoothness of movement during suturing and flexible bronchoscopy. Using these technologies we were able to estimate individual performance levels, monitor changes in performance over time, and identify critical moments in team interactions. In all studies we encountered similar challenges: 1) translating low-level data into relevant assessment measures; 2) a need for computational models to arrive at unbiased predictions and effectively filter out noise to support real-time feedback.

Results & Discussion

Simulator technology and wearables add unique assessment information to traditional measures. They have the potential to provide relevant and objective performance feedback to trainees during unsupervised training in a simulated environment, e.g. repeated rehearsal of basic flexible bronchoscopy tasks on a VR simulator. This also allows examining the effectiveness of novel training paradigms. Integrating these measures into standard educational practice is a challenge and requires technical solutions for data synchronization, processing, and analysis. Also, an assessment framework needs to be developed to understand how low-level data from these tools correspond to clinical performance. Integrating the abundance of measures into meaningful performance outcomes is an innovation in its own right.

Keywords

wearables; simulation technology; assessment framework; data processing

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Optimal Team Composition in Medical Emergencies

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

Camilla Normand on behalf of the SAFETY project

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Introduction: Background, Context and Aims

Resuscitation simulation training has been shown to improve interdisciplinary team performance, which in turn leads to improved patient outcome.(1) To optimize the benefits of simulation training, it is essential that we identify the optimal composition of resuscitation teams so that we can reproduce these in training.

Methods

As part of the ERASMUS+ project 'Simulation Approach For Education and Training in emergency (SAFETY)' we have reviewed the current scientific literature and performed a systematic review to answer the question – what is the optimal team composition in medical emergencies?

We searched the databases Embase, Medline and PsycInfo using the terms: team, trauma team, healthcare, treatment, emergency, medicine, and centre. These searches lead to 1728 articles and after full-text screening 17 articles were included in the analysis.

Results & Discussion

We found no article describing optimal team composition for emergency training. All the reviewed articles described real life treatment, not simulation.

Furthermore, based on published papers on clinical practices, there appears to be "several roads to Rome" regarding the optimal team composition in an emergency resuscitation. Some hospitals advocate a large team while others manage with a smaller team. The minimum team described, a rapid response team, appears to require only two members, a doctor team leader and a nurse.

Most of the literature refers to trauma teams. Here the consensus is that a basic trauma team should consist of at least a team leader, one or two emergency nurses, a radiology technician and, preferably, an anaesthetist.

Our review also shows that a trauma team needs a team leader but that this leader may not need to be a surgeon or even a doctor. (2)

Specialized team compositions are required for paediatric patients and acute stroke patients but again there are local variations.

In our search through the literature for the optimal team composition to deal with emergencies, we have therefore discovered variations on how to treat these emergencies efficiently. What is clearly lacking is any discussion of the optimal team composition for training in emergency medicine. In our literature search, we found no article on this topic. This leads us to assume that the "characters" used in simulation for training in emergencies are based on real life rather than on what would be required for the optimal training scenario. While this is a sensible approach, it does not answer our key question: what is the optimal team composition of training in medical emergencies?

Keywords

Simulation, training, medical emergencies, trauma, emergency medicine

References/Acknowledgements (Vancouver Citation style)

Thank you to Stavanger University Medical Library and especially Hilde Elin Sperrevik Magnussen and Kari Hølland for their assistance with the literature searches and use of Rayyan.

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SOCIETY FOR
SIMULATION IN EUROPE

PARAMEDIC STUDENTS DEVELOPING PRE-HOSPITAL PATIENT TRIAGE AND MANAGEMENT SKILLS USING VISUALLY ENHANCED MENTAL SIMULATION

Format: Research Studies - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

Authors

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Introduction: Background, Context and Aims

Mass casualty incidents are complex to manage as they involve triaging many patients. This is a skill that needs to be learnt and practised. This study was conducted during the COVID-19 pandemic to evaluate how online scenario-based Visually Enhanced Mental Simulation (VEMS)^{1,2} is effective in developing paramedic students' casualty triage and management skills.

Methods

The study involved 20 volunteer students studying in First and Emergency Aid. Participants completed a demographic questionnaire and a pre-VEMS assessment after having taken part in an online theoretical "crime scene management and triage" course. Following an online VEMS sessions, students completed a post-VEMS assessment and provided feedback about this educational approach.

Results & Discussion

Results & Discussion

Comparison of the pre-/post-educational intervention student assessments showed a statistically significant increase in their scores ($p < 0.05$). Supporting previous findings³, most of the students positively evaluated online VEMS as an educational approach.

Conclusion

Paramedic students can acquire patient triage and management skills using online VEMS. This low-cost simulation-based educational approach should be considered to help students from all healthcare professions acquire important skills and knowledge⁴. It might be particularly useful when physical distancing between learners is required and or when learning activities need to be offered to remotely located learners.

Keywords

Visually Enhanced Mental Simulation; triage; simulation; paramedic; pre-hospital emergency care; online education

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We are thankful to our paramedic students who participated in the study, to Instructor Abdullah Dadak who did the statistical analysis of the study and to Prof. Melih Elcin who supported us during each study phase with his expertise on study design.

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SOCIETY FOR
SIMULATION IN EUROPE

POST PARTUM HEMORRHAGE: how simulation and teamwork affect clinical practice

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Post Partum Hemorrhage (PPH) is known to be the first cause of maternal mortality and severe morbidity; it's responsible of about a quarter of maternal deaths that take place. Among the issues that have emerged there are poor communication between practitioners, the inability to assess the severity of the problem and the delay in the diagnosis and treatment of the event. This data should be interpreted as a starting point to improve the management of this major emergency, with the goal of decreasing negative outcomes for both mother and newborn. PPH represents one of the harder to manage events in the obstetrics field: clinical simulation could greatly improve management.

Methods

The goal of this study is to support simulation as a method to improve learning and soft skills development. This method appears to be applicable across all the situations where a working team is involved. This includes the importance of growing and developing it so as to prepare the students to deal with different obstetric emergencies. Moreover, the practice of simulation aims not only to allow the operating staff to improve their technical skills, but also to assess the management of PPH.

The simulation sessions took place during September and October 2022 and the population taken into consideration consists of first and second year residents of the School of Specialization in Gynecology and Obstetrics and students of the Bachelor's degree program in Midwifery at the University of Padua. The simulation, with audio-video recording, involved three sessions including prebriefing, scenario and debriefing, splitting the students in 9 groups of 4-5 people. To highlight the durability of the notions learned during the simulations, there will also be an examination of the outcomes, obtained through surveys (before and after the simulation) and feedbacks during debriefing. The simulation meetings were held two weeks apart. A final analysis on the objectives accomplishment is carried out, during the third and last simulation, by making the students handle a different emergency: the management of an eclamptic seizure.

Results & Discussion

Pre and post simulation surveys were administered to all participants in every session. Every simulation video was then evaluated. All the participants considered the simulation useful for working practice with a rating 8 over 10. Same was for the opportunity to learn team-working and clinical learning. Moreover, all the participants highlight how taking part in the simulation has improved their performance in the workplace.

Keywords

obstetrics; delivery room; emergencies; Post Partum Hemorrhage

References/Acknowledgements (Vancouver Citation style)

Acknowledgements: OPS working group (Libera Maria Guerra, Michela Vettore, Annunziata D'Aniello, Cecilia Florentino, Filippo Zemin, Marta Bonaventura, Stefania Carli, Tommaso Vezzano, Giovanni Pellegrin, Maria Chiara Guerra, Federica Sartor, Irene Marangoni, Francesca Frigo, Sandro Savino, Alessandro Galbiati)

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SOCIETY FOR
SIMULATION IN EUROPE

POST-GRADUATE TRAINING ON MULTIDISCIPLINARY APPROACH TO THE PATIENT WITH MULTIDRUG RESISTANT SEVERE INFECTION THROUGH HIGH-FIDELITY SIMULATION

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Unified critical care in post-graduate training is of vital importance for the correct patient management and patient safety. We offer a workshop including high-fidelity simulation clinical scenarios for the training of post-graduate specialist including infectious disease experts, microbiologist, pharmacologist, and emergency doctors to educate them on core topics and procedural skills related to the management of patients with severe multidrug resistant infections.

The aims of our study were to monitor participants' knowledge and efficacy of the activity proposed using the latest guidelines; to evaluate the effectiveness of the take home messages and to evaluate doctors' level of satisfaction after their simulation performances.

Methods

Seventeen doctors from different specialties participated in the activities. They consisted in the running of high-fidelity simulation clinical scenarios focused on the management of patients with severe multidrug resistant infections. To evaluate the baseline knowledge of the participants on this topic, a pre-simulation test consistent in 30 questions was electronically delivered to participants before the activity. The same test was re proposed after the activity was completed. Comparison of the outcomes of the pre- and post-activity tests was done to evaluate simulation-based medical education impact on post-graduates' knowledge and effectiveness of the take home messages.

Results & Discussion

The media of the correct answer in the pre-activity test was 23,27 (out of 30 questions) while it was 29,07 in the post-activity test. Comparison between the media of the pre-test and the post-test was highly significant ($P < 0,005$). High-fidelity simulation is a potent method for multidisciplinary training and education for multidisciplinary post-graduate doctors for the teaching of management of patients with severe multidrug resistant infections. As a method, the high-fidelity simulation resulted in a high participants' satisfaction level and showed a very significant potential for the acquirement of knowledge in the post graduate learning.

Keywords

severe infections, high-fidelity simulation, postgraduate training

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Paediatric Sim Off

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

As clinicians, our primary aim is to deliver high-quality patient-centred care. Simulation-based learning enables healthcare professionals to develop the knowledge, skills and behaviours that can help individuals, teams and systems improve. Using a game-based contest enhances this by engaging learners, motivating collaborative problem-solving skills, and galvanising immersive team performance in a fun, relaxed and safe learning environment.

Methods

The event involved teams of up to five healthcare professionals or students taking part in moderate-high complexity simulated paediatric scenarios.

Thirteen teams of healthcare professionals, medical and nursing students across the UK & Ireland competed to be crowned Paediatric Sim-Off Champions 2022.

We were also delighted to be joined by two fantastic guest speakers, Professor Walter Eppich (Chair of Sim, RCSI, Dublin) and Dr Dani Hall (PEM Consultant, OLCHC, Dublin & Don't Forget the Bubbles).

Results & Discussion

It was a day of great fun, excitement and a really collaborative learning experience that promoted regional and national paediatric interaction and co-operation.

The feedback from participants, observers, educators, healthcare professionals and industry colleagues has been outstanding. Some feedback from the event includes:

“This was a fantastic learning opportunity – will recommend to my current and future colleagues”

“One of the best educational events so far in my (lengthy) career”

“Really fabulous day and a really positive atmosphere. Thank you so much”

“The first time I am attending – amazing event – so glad I attended”

Discussions have already begun with some interested teams in hosting next year's event, and making it a permanent fixture in the Simulation calendar.

Keywords

Paediatrics

References/Acknowledgements (Vancouver Citation style)

We would like to thank all the participants for taking part and our two fantastic guest speakers - Professor Walter Eppich and Dr Dani Hall



SOCIETY FOR
SIMULATION IN EUROPE

Paediatric ward in situ team simulation training 2019 – current. (POSTER PRESENTATION)

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

- Sunshine Hospital Children's ward is a 20-bed inpatient unit in an outer metropolitan area of Melbourne, Australia
- Significant clinical deterioration of admitted paediatric patients is an infrequent event, and can be an emotional and high stress situation
- To enhance the teams' comfort and skills in responding to these critical events, an in situ team simulation program was developed
- The simulations include nursing, paediatric medical and other craft groups training together
- The simulation is run in situ on the Children's Ward

Methods

- The scenarios include the most frequent causes of paediatric deterioration such as seizures, upper/lower airway compromise, cardiac arrest, anaphylaxis and sepsis
- The paediatric nursing and medical education team created and continue to run the simulations, occurring 1-2 times per month
- Workflow is managed to allow nursing and medical staff to participate without clinical duties
- The participants are pre-allocated prior to the session, and provided with pre-reading
- The program is based on the principals of simulation including creating a safe learning environment, confidentiality and teamwork
- The training begins with a tour of our clinical space, including locations of all resuscitation equipment. We then discuss use of cognitive aids in a resuscitation such as laminated algorithms (Advanced Paediatric Life Support Algorithms) (1) and use of precalculated resuscitation doses (Paediatric Emergency Medication Book) (2)
- Post simulation feedback about the program is sought, and the key learning points from the scenario are distributed to the whole unit following each simulation

Results & Discussion

- Written feedback has been sought following each simulation, and the program has been consistently rated as excellent
- The program has been popular with the nursing and medical staff, with requests from staff to be allocated to training
- Team training has improved relationships between the nursing and paediatric medical staff, and between different craft groups (e.g., anaesthetics and Emergency Department). The training has allowed the team to learn together, away from

their clinical duties

- Staff have provided feedback to the education team that participating in the simulation program has increased their level of comfort and skill when responding to deteriorating patients
- In winter 2022 there was a surge in paediatric patient presentations in Melbourne, including increased acuity and critically unwell paediatric patients. The simulation program has increased the team's comfort and skills at managing this more unwell patient cohort

Keywords

Paediatric, in situ simulation, team training

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Palliative medicine emergencies: Building the case for harnessing simulation in the training for traumatic terminal events

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

Palliative emergencies are challenging events that require masterful and timely application of cognitive, behavioural and affective skills. Their rarity and unpredictability make such critical training difficult in actual clinical practice. Palliative emergencies are key content within the specialty's training curriculum.[1] These include severe opioid toxicity and terminal events, which are major events likely to cause death in a short time, such as seizure or haemorrhage. These can be traumatic, requiring supportive care for patients, families and staff.

A multidisciplinary group developed and delivered an undergraduate palliative medicine simulation day in 2021. Students were engaged by the challenging, novel and safe experience and facilitators identified simulation as effective in teaching palliative medicine competencies. The potential to enhance confidence, competence and psychological preparedness of palliative medicine specialty trainees in challenging end-of-life scenarios through simulation was recognised.

Methods

The needs of palliative medicine specialty trainees relating to palliative emergencies were assessed through a regional trainee survey. All trainees had encountered terminal events, despite them being considered rare. 50% involved haemorrhage, 25% seizures and 25% airway obstruction. 80% occurred out-of-hours. 83% of trainees lacked confidence in managing haemorrhage or seizure. All lacked confidence in airway obstruction. 83% had encountered severe opioid toxicity, but 50% lacked confidence in management. All trainees worried about being the most senior doctor present, especially in community settings or if it involved tracheostomy care. 50% lacked confidence in leading and supporting the team. All trainees found associated reflection difficult. Barriers included time, multisite working, lack of formal debriefs, and emotional burden.

All trainees felt training for emergencies would improve their patient care and leadership skills. Complex scenarios on opioid toxicity, tracheostomy management, haemorrhage and seizures were developed using manikin-based simulation in hospice and community settings. These incorporate management of patients and distressed colleagues or relatives. The trainee simulation day will be piloted in 2023.

Results & Discussion

Trainees report significant anxieties about leading palliative emergencies. Their traumatic nature can restrict experiential learning through emotional barriers, impacted further by lack of formal workplace reflection. Simulation can recreate

palliative emergencies, focusing on patient management, trainee wellbeing and non-technical skills, including leadership. Reflection on difficult events is supported through psychologically safe expert-facilitated debrief. Repeating simulation scenarios will reinforce skills and strengthen trainee self-efficacy.

The group aims to extend the pilot to other specialties and professions, improving interprofessional approaches and relationships surrounding terminal events. The need for a regional debriefing approach after real palliative emergencies is also highlighted.

Keywords

Palliative medicine

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Pandemic preparedness; examining skill retention in Personal Protective Equipment donning and doffing for High Consequence Infectious Diseases

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

Authors

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Introduction: Background, Context and Aims

An unanswered question within clinical skills training, and within Personal Protective Equipment (PPE) donning and doffing training specifically, is the duration for which learners retain their skills. This is particularly relevant in a rare clinical scenario, such as a patient presenting with a High Consequence Infectious Disease (HCID), as healthcare workers (HCWs) are unlikely to have clinical exposure which would otherwise reinforce their learning following initial training. We seek to understand the factors that affect skill retention and the interval at which repeat training should be mandated to ensure the safe and effective use of PPE.

Methods

Simulation Based Mastery Learning (SBML) is an effective methodology for providing high quality training to HCWs in these complex and anxiety invoking skills (1). Simulation Based Mastery Learning (SBML) is more effective than standard simulation scenarios in the retention of clinical skills in some settings, such as peripheral venous cannula insertion (2). Learners who were previously trained and passed the assessment in HCID PPE donning and doffing using SBML will be re-assessed using the same Mastery Angoff standard set checklist as at their initial assessment, without any further educational intervention, at six months. Learners that demonstrate the expected standard on repeat testing will be invited back in a further three months for re-evaluation, while those that do not will be invited to a refresher session. Learners' experience and self-assessed preparedness will be explored using a questionnaire at various time points (Table 1) and used to compare learners who meet the passing standard with any who require refresher training. This feedback will include any clinical exposure to the skill between initial assessment and re-assessment.

Results & Discussion

SBML, along with other Simulation Based Educational interventions, is a time and resource intensive process. There is a balance of risk between optimal preparedness for future pandemics, and the need to ensure other important clinical and educational priorities are met (3). Factors such as intervening clinical exposure to this skill and the learner's self-assessed preparedness will affect the rate of skill decay. Repeat assessment and training should be performed on a regular basis with a maximal interval in place between assessments to ensure staff safety. In addition, offering training at impactful transition points such as HCWs returning from extended absence will improve efficiency by targeting high priority learners. Finally, refresher training should be offered on an accelerated basis to learners whose self-assessed preparedness drops more rapidly after the initial training, in keeping with the self-assessment component of the SBML assessment.

Keywords

Pandemic, preparedness, PPE, SBML, Mastery, Skill retention, skill decay

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Paramedicine students as simulated patients in an introduction program for first year residents (FY1)

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

First year residents (FY1) at Stavanger University Hospital (SUH) attend a mandatory introduction program before starting their work at the hospital. The FY1s have provided feedback that they wanted more scenario-based simulation to help them prepare to master clinical challenges at the hospital. Through collaborative work between the SUH and the bachelor program for paramedicine at the University of Stavanger, we discovered an opportunity to improve learning and realism in the scenarios, provide interprofessional learning opportunities, and achieve academic and residential learning goals. Our pilot work focused on preparing and safely involving 2nd year paramedic students as simulated patients in these scenarios.

Methods

The paramedicine students entered the role of simulated patients during these days and achieved two curricular learning goals:

1. Have broad knowledge of methods for patient examination, history taking, assessment and measures related to injuries or diseases in one or more organ system
2. Can reflect on and have insight into the patient's perspective

Student preparation methods were undertaken in accordance with The Association of Standardized Patients Educators (ASPE) (1). The students attended a half-day preparation course before the introduction program including opportunities to get acquainted with scenarios (12), choosing which scenarios to participate in, peer-to-peer training with instructor supervision and feedback on simulated patient behaviour, empowering students to collaborate with physician facilitators and focusing on the patients' perspective in the debriefing. Two simulation experts from the hospital coached the students how to present patient cases realistically.

Results & Discussion

Involvement of the paramedic students in this introduction program was well evaluated by both the facilitators (experienced doctors), FY1s and the students. Post-course feedback from the students was collected. Some examples were: "I learned: how to speak respectfully and understandably to the patient; how to treat COPD exacerbation; the importance of patience and respect, especially in psychiatry. The students experienced being simulated patients as valuable learning. They had suggestions for improvement including desire for more preparation time, disappointment in only being able to participate as a simulated patient in one case instead of having the opportunity to be involved in several. We will use these suggestions to improve the next introduction program for FY1. The paramedicine students contributed to realism in the scenarios, experienced interprofessional learning and achieved curriculum objectives.

Keywords

Interprofessional simulation in education, introduction program for residents, simulated patients, paramedicine

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Preparing Paediatricians for Procedural Practice; A modified-Mastery Skills Intervention

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

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Introduction: Background, Context and Aims

Children and young people deserve the best quality care, particularly with respect to risk-inherent invasive procedures. Along with potential physical harm, poorly performed procedures are associated with adverse psychological impact upon the child and their caregivers (1).

International collaborative standards to Support Paediatric Patients during clinical procedures, Reducing harm and establishing Trust (iSUPPORT) describes rights based standards for clinical procedures based on lived experiences, stating that children and young people have rights to a competent clinician performing their procedure (1).

Simulation-Based Mastery Learning (SBML) is a robust, evidence-based teaching methodology which improves the acquisition of procedural skills, with the aim of supporting all learners to achieve an agreed standard (2). SBML has been less well explored in the paediatric population but has been used for central and peripheral intravenous (IV) access skills and lumbar puncture in United States of America based learners (3,4).

The NHS Lothian modified-SBML methodology has enhanced the learning experience and process for our post-graduate learners in adult medicine but has not been studied in post-graduate paediatric trainees (5).

Methods

A needs-analysis, based upon a combination of clinical and trainee experiential data, identified a skills gap for paediatricians in establishing complex IV access for delivering IV antibiotics. This is commonly achieved via insertion of

Peripherally Inserted Central Catheter (PICC)/midline. This finding is aligned to priorities of Paediatric Scottish Patient Safety Programme (6).

An innovative SBML programme will be co-created and facilitated by medical paediatric and anaesthetic teams in winter 2022 to meet this clinical and educational need.

Priority learners will be advanced paediatric trainees. It will be tailored to address unique paediatric challenges including patient heterogeneity, consent and ensuring child-centeredness.

In addition to immediate post-session feedback, evaluation will include follow-up data focusing on learners' experience of performance in clinical practice and quality markers such as procedural success and complication rates.

Results & Discussion

NHS Lothian's modified-SBML is an effective methodology for procedural skill acquisition. This novel programme will represent the first application of the methodology in a paediatrician learner group in the United Kingdom. The impact of this educational intervention will be explored from an experiential learner and clinical perspective, using a combination of qualitative and quantitative data.

Keywords

Paediatrics, Anaesthetics, Simulation Based Mastery Learning

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Preparing the Junior Surgical Registrar: Developing Non-Technical Skills Through Simulation of Routine Clinical Scenarios

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Becoming a Surgical Registrar (SR) in the United Kingdom (UK) is a key transitional stage of training in a surgeon's career. The role of the SR carries great responsibility and autonomy; challenging both Technical Skills (TS) and Non-Technical Skills (NTS).

NTS include cognitive and interpersonal skills and can significantly impact patient safety and working cultures in surgery(1).

Surgical trainees are afforded many opportunities to develop their skills, predominantly prioritising TS, through 'bootcamps' and courses, in addition to their surgical placements.

Whilst the importance of NTS training is increasingly well-recognised(2), the surgical curriculum is yet to adequately reflect this.

Programmes addressing NTS often emulate 'surgical crises', using Simulation-Based Education (SBE), preparing trainees' NTS for emergencies. Whilst this is important, it overlooks the potential to utilise SBE to ready trainees for the everyday routine of a SR.

Non-Operative Technical Skills for Surgeons (NOTSS) is a well-established taxonomy for the experienced surgeon in the operating theatre (OT)(3), however, no such programme exists for the Junior Surgical Registrar (JSR).

This study aims to identify which NTS are required by JSRs, and once elicited, these skills will inform the development of a dedicated NTS simulation programme for JSRs nationwide.

SBE has been appraised for its use in supporting progression through transitional stages and as such, our study will utilise an SBE approach(4).

Methods

Through means of questionnaires and focus groups, SRs were asked to identify the NTS necessary to fulfill their roles and explored the relevant clinical scenarios where these were exemplified. Additionally, participants were asked to rank a list of hypothesized clinical scenarios.

A series of simulated, routine clinical scenarios, embodying NTS, was developed and refined following review of results to ensure that consensus priorities in NTS were represented.

This new simulation series will be piloted by JSRs and will be evaluated using pre-test and post-test surveys of readiness in NTS for transitioning into the JSR role.

Results & Discussion

The need for training surgeons in NTS is now globally accepted(1), however, there is yet to be adequate provision of NTS training for JSRs. From our research, we have identified which NTS are key to this stage of training with results informing our simulation programme. We anticipate that this will better prepare participating trainees' NTS for this transition, with potential to improve working cultures across surgery and ultimately benefiting patient safety.

Keywords

Clinical Surgery, Non-technical skills, Simulation, Curriculum

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Promoting organisational learning through the implementation of interprofessional simulation training

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

The imperative for interprofessional education (IPE) in undergraduate clinical training is clear. However, while there is an abundance of literature examining the learning that IPE can promote in individuals, there are few studies examining its ability to bring about organisational learning.

Examining what educational teams, and their organisations, learn through the development and delivery of IPE is key to identifying the barriers to implementing it more widely across higher learning institutions. Superficially, such learning may amount to the identification of logistical difficulties. However, examining this data alone would fail to take into account the complex sociological factors at play when higher learning institutions, and different professional groups, collaborate to develop IPE. In particular, there are fundamental differences in the way in which specialist knowledge is constructed and transmitted in different healthcare professions' training while the development of IPE itself may highlight existing power inequalities between professions.

Methods

In order to better understand the organisational learning that can arise from IPE activities, we have developed an interprofessional simulation course for nursing students from Oxford Brookes university and medical students from the University of Oxford. Development of this course involved collaboration across two institutions and involved consideration of the needs of the medical school undergraduate curriculum and several nursing and allied health professional curricula.

Qualitative data will be collected from faculty around the experience of developing and delivering the training. This data will be examined through the lens of Bernstein's theory of pedagogic discourse (Bernstein 1996) which explores themes of professional discourses and power relations.

Routine evaluation of the learning that undergraduates acquire through the course will be completed alongside faculty data collection. These data sets will be correlated to identify analogous themes - in particular those pertaining to professional discourses and power inequalities. Data gathered will be used to inform organisations' pedagogic practice for IPE.

Results & Discussion

Given that IPE is becoming more commonplace in undergraduate clinical education, it is important to examine the sociological barriers to its implementation alongside the logistical challenges. In doing so, we can better predict issues that may arise and adapt our organisations to better facilitate IPE development.

In particular, higher learning institutions need to ensure that their overarching ethos, and the way in which knowledge is transmitted within their curricula, is commensurate with promoting interprofessional values. At the same time, negotiating differences in professional discourses and power imbalances across institutions is key to promoting effective working relationships between educators.

Keywords

interprofessional; simulation; power; undergraduate education; professional discourses; psychiatry

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Psychiatric Emergency Simulation (PES) : A national pilot

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Therapeutic uses of Simulation

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Introduction: Background, Context and Aims

The UK General Medical Council asserts that learners must have access to simulation based learning opportunities within their training programme (1). Despite the establishment of simulation within postgraduate medicine and surgery training in Scotland, the national psychiatry training programme has remained bereft of simulation. Indeed simulation based education within psychiatry is less developed than other specialties (2).

The PES (Psychiatric Emergency Simulation) Course was developed by a group of psychiatrists and educators experienced in simulation. Aligned to the Higher Level Outcomes of the Royal College of Psychiatrists Core Psychiatry Curriculum (2022), the PES Course aims to provide core psychiatry trainees in their first year of training (CT1s) experience of managing acute psychiatric emergencies which they can apply to their clinical practice.

Methods

In 2022, all CT1s working in psychiatry in Scotland were invited to participate in two pilot PES Courses. The courses comprised 5 psychiatric emergencies scenarios that CT1s are likely to encounter - deliberate self-harm, mania, anorexia nervosa, delirium and acute behavioural disturbance. Patients were portrayed by trained actors. Each simulation lasted 15 minutes and was followed by a 30-minute debriefing session co-facilitated by 2 experienced psychiatrists. Feedback was collected via anonymous pre and post course questionnaires completed at the time of the course.

Results & Discussion

Seven CT1s participated in the pilot PES Courses, all of whom completed the feedback questionnaires. Eighty-six percent had no prior experience of psychiatry simulation, reinforcing the underutilisation of mental health related simulation.

The majority of CT1s felt that that the PES course increased their confidence in assessing risk (86%) and their knowledge of how to manage patients presenting with acute psychiatric emergencies (57%). Taking a focussed history from a patient presenting with a mental health crisis was highlighted as a particularly beneficial aspect of the course. Most CT1s (86%) strongly agreed that the scenarios were realistic, and CT1s universally indicated that the course was both enjoyable and relevant to their role.

Participants valued the opportunity provided by the PES Course to improve their confidence in managing psychiatry emergencies. NHS Education for Scotland recognise the value of psychiatry simulation, and are funding all CT1s working in Scotland from August 2022 to participate in the PES Course. It will be the first postgraduate psychiatry simulation course implemented at a national level to our knowledge.

Keywords

Psychiatry, Mental Health, Postgraduate, Immersive Simulation, National Simulation

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SOCIETY FOR
SIMULATION IN EUROPE

Psychological Safety in early experiences of immersive simulation: PS. I'll be OK!

Format: Research Studies - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

Faculty strive to ensure psychological safety (PS) in immersive simulation. Multiple well evidenced tools already exist to ensure a psychologically safe container for learning.¹ Kolbe et al. described PS as a 'dynamic balancing act' where it can be lost and regained throughout the session and proposed practical strategies on addressing nonconstructive tensions.² However, these rely on faculty being accurate sensors of PS but can faculty gage PS accurately for all learners? The aim is to understand the enablers and barriers of psychological safety in early experiences of simulation.

Methods

Perspectives of final year medical students were sought through 20 semi-structured interviews. Purposive sampling from undergraduate medical student volunteers sought a diverse sample which included learners from under-represented groups. Interviews were transcribed verbatim and anonymised. A constructivist standpoint underpinned a reflexive thematic analysis.³

Results & Discussion

Results

The interviews highlight that psychological safety is complex and an individual experience. Factors such as prior knowledge of the other participants can enable PS for some, whilst be a barrier for others. Participants can interpret factors differently based on their individual characteristics, previous experiences and stage of learning.

Medical students judge PS on explicit and implicit factors. PS is gaged by what is said and done but also how it is said and how it is done. These factors are influenced by cultural norms of the higher education institutes, health services and society, which participants transverse.

To enable PS, faculty must ensure a 'sense of familiarity', 'be nurturing' and ensure 'transparency'.

Participant and faculty may be unfamiliar with each other due to large student cohorts. Medical students may lack familiarity with the process of simulation; clinical skills; and the doctor's role, such as taking decisions. Creating a 'sense of familiarity' by introductions, a walk around the suit and prior acquisition of skills can improve PS.

Nurturing is defined as being 'learner centered' to aid the learner's growth. Nurturing involves designing the session around the learner's needs; sensing learner discomfort and adjust the level of challenge in the session and buffering any adverse cultural norms such as racism and stereotypes.

Transparency is defined as honesty, being humble and not shying away from discussing tensions in simulation and clinical environments. Discussing tensions if not solving them can help ease them.

Psychological safety ensures candour and constructive conversations where everyone is heard, safe to learn and challenge the status quo. This is enabled through familiarity, nurture and transparency.

Keywords

psychological safety, undergraduates, immersive simulation.

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Qualitative concepts and framework to assess realism in clinical simulation

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

The refinement with which reality is represented in clinical simulation is usually classified into low, medium, and high fidelity, however “fidelity” might be considered a vague and subjective term. Moreover, the lack of measurement tools and incipient culture to objectively assess realism may be preventing us from knowing the true impact of realistic scenarios on learning outcomes and knowledge transfer between simulated practices and real clinical settings.

Methods

A study combining Delphi method and statistical validation through correlations, Cronbach's Alpha and Guttman's Lambda 6, allowed the development of a qualitative-quantitative framework to assess realism, combining new concepts into a measurement tool organized into categories and subcategories that facilitate the interpretation of realism and its nuances. This framework aims to encourage the non-empirical use of the term fidelity / realism and to improve intended and attained realism in clinical simulation scenarios, consequently leading to more effective simulation practices. Structuring key dimensions, defining its variables and tying indicators to a 10 point Likert scale allowed the launch of ProRealSim v1.0, an online free of charge tool that can be run from a variety of devices worldwide, available in both English and Spanish (soon available in Portuguese as well).

Results & Discussion

This research describes the qualitative elements that constitute the framework taking into consideration three spheres of realism (intended, perceived and attained), three pivot components most frequently applied to stage realism (simulated participant, scenario/scenography, and simulator) and how all these variables score in terms of accuracy and naturality. To the best of our knowledge, it is a novel approach that allows a versatile analysis of realism and the outcomes derived from its deployment might be beneficial to many health sciences programs applying the clinical simulation - not only spreading the culture of measuring realism, but also enhancing methodological aspects of simulation and ultimately improving the training of healthcare professionals and quality of care.

Keywords

Healthcare simulation; simulation fidelity; simulation realism; measuring simulation realism; evaluation; assessment tool

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SOCIETY FOR
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RRS simulations: Debriefs as system probing and an arena to improve collaboration

Format: Research Studies - Oral Presentations and Short Communications

Topic: Debriefing

Authors

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Introduction: Background, Context and Aims

A Norwegian University hospital introduced weekly in-situ simulations (IS) in two wards to improve the care for deteriorating patients. The hospital had an established Rapid response system (RRS)(1) with National Early Warning Score(2) as trigger criteria, a response protocol, and a Medical Emergency Team (MET: physician and nurse from the ICU). Still, adverse events with RRS protocol breaches occurred. A research project used these ISs to conduct a qualitative study(3) to probe the hospital's RRS system. This abstract presents findings from the FGIs with the following aim: Understanding how simulation debriefs can contribute to improve interprofessional collaboration within the RRS.

Methods

We conducted the debrief in six interprofessional RRS IS as FGIs and analysed the interviews using thematic analysis(4). The Hospital Data Protection Officer approved the data collection. The participants were nurses, physicians, and healthcare assistants from the wards. All signed informed consent.

Results & Discussion

Theme 1: By identifying current collaboration challenges

The debriefs identified variations in healthcare personnel (HCP) education about the current scoring system and protocol, leading to frustrations and conflicts.

Variable knowledge and use of recommended routines for documenting responses for deteriorating patients caused HCP to spend much time searching for essential information about decisions.

The debriefs revealed challenges regarding interprofessional teamwork when a patient deteriorated. HCP felt overloaded with work and had little knowledge about the challenges of the other profession. Additionally, when calling to and collaborating with the MET, the participants had experienced both criticism and not being listened to.

Theme 2: By identifying improvement requests

The participants requested interprofessional teaching sessions about the RRS to provide a foundation for collaboration. This was seen as an opportunity to agree upon and implement one easily available routine for documentation, aiding in effective clarification and streamlining communication.

IS was jointly requested to improve collaboration. HCP believed IS facilitated teamwork, building collective situational awareness. They saw the debriefs as needed arenas to exchange opinions and experiences between professions as such interprofessional arenas were considered rare in daily work.

This study provides insight into debriefs as valuable arenas to build interprofessional collaboration in the RRS. The IS scenario and facilitator questions can elicit a rich discussion to reveal current challenges and provide improvement ideas. The debrief in itself represents an arena for interprofessional dialogue.

Keywords

Rapid response system, medical emergency team, healthcare personnel, deteriorating patients, debrief, interprofessional collaboration,

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SOCIETY FOR
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Role of Team Training in the Development of Local Trauma Protocol

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

Imagine a young man seriously injured in a car accident. His condition deteriorates and his circulation gets very unstable during the transport to the emergency...

Emergency thoracotomy and the clamping of the aorta is one of the recommended procedures to stabilise a patient's circulation and to get time for diagnostics and damage-controlled surgery. This procedure may be suitable for the case described above. To introduce and to test a new trauma admission protocol we used an interprofessional training. The protocol contains the approach to polytraumatized unstable patients and includes the emergency thoracotomy, a procedure that our team members haven't performed very often in the past. The aims of this simulation were not only to train the technical and practical aspects of the admission and cross clamping as such but mainly to identify any eventual human or systematic errors during the novel procedure. All the findings were taken into account when designing a new trauma protocol.

Methods

This multidisciplinary simulation took place at the end of year 2019, before the finalisation of local trauma protocol. For greater authenticity it was held directly in the emergency room where polytrauma patients are real-life admitted. The participants were surgeons, traumatologists, anesthesiologists, emergency medicine doctors, nurses, paramedics, and

orderlies. The patient was a high fidelity manikin and we used real functional props (neck collar, pelvic belt, vacuum mattress). Within a few hours, three different scenarios with increased severity were trained. The participants were allowed to use all the real medical equipment of the emergency room, they followed the basics of asepsis to mimic the reality of the timespan. The learning points were the thoracotomy timing, trauma team management, leadership, and particularly revealing the safety gaps. The result was better design of the trauma protocol.

Results & Discussion

As part of this simulation training, possibilities for improvement were discussed in every debriefing to make the process as efficient and as fast as possible. The different points of view of individual specialists were very beneficial in this discussion, and the interdisciplinary cooperation significantly improved even during the course of the simulation sessions. Specific practical imperfections and equipment gaps were revealed and eliminated. This pilot project confirmed to us that simulation medicine is beneficial for testing new procedures. High efficiency of this testing process encouraged us to use it in future on more regular bases.

Keywords

trauma, protocol, simulation, testing, safety gaps, multidisciplinary, team

References/Acknowledgements (Vancouver Citation style)

N/A



SOCIETY FOR
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SIMULATION-BASED MILITARY EMERGENCY EDUCATIONAL PROGRAM

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

The Armed Forces of São Tomé e Príncipe in partnership with the Portuguese Armed Forces, through the Military Health Education, Training and Research Unit, have developed a simulation-based training model that includes areas such as victim assessment, medical emergencies, trauma emergencies and combat emergencies (North Atlantic Treaty Organization, 2017; 2019). This creates a precursor platform for a military health training center with an expansion capacity for health training to civil society. With this study, we want to assess the capacity to implement and also the skills development on simulation-based military emergency educational program by the soldiers.

Methods

Observational study with a non-probabilistic sample with 37 São Tomé e Príncipe soldiers. We used peer learning methodology based on simulation (Vilelas, 2017). This hybrid educational program was realized in four phases. The first phase began with online lessons with 12 military nurses and medics who were identified as potential trainers. In the second phase, the team of Portuguese-certified trainers went to São Tomé e Príncipe starting 3 weeks of face-to-face training. In the first week were implemented some practice lessons based on simulation and pedagogical content for the first 12 elements; in the second week these elements trained 12 more military nurses, medics, marines and other staff military personnel with the same technics and with pedagogical accompaniment; in the third week, they trained 13 more military soldiers with almost total autonomy.

To collect data, we used an observational table with variables focused on the efficacy of each soldier in implementing the emergency actions, satisfaction with the program and trainers. The official Portuguese soldiers assessed the capacity to teach of each trainer soldier. For data analysis we use descriptive statistics according to the nature of variables using SPSS

Results & Discussion

We verified better development of the capacity to teach another soldiers during the program. 70% (n=26) of participants were very satisfied with the type of exercises made during the simulation sessions. All of them had excellent results in final tests of knowledge and demonstrate engagement with practice exercises. 86% (n=32) related very good relationships with the trainers. The soldiers (80%, n=30) considered the pedagogical supports with higher quality. In the

future will be fundamental to assess the skills of each soldier in area of military emergency 3 months and 6 months after the implementation of the educational program and assessment the capacity to teach of the trainers in a new group of soldiers.

Keywords

Simulation-based, military, military health, training model

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
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Simulation-based Teaching in Academic Specialty Training: An Inventory of Current supply and demand (SIMTASTIC)

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Simulation-based medical education (SBME) is an increasingly used teaching method 1-2. However, the use and reception of SBME within the largest University hospital of the Netherlands, the Amsterdam University Medical Centre (Amsterdam UMC), is still to be determined. This makes design of a fitting educational curriculum more difficult. Because a gap analysis that describes the supply and demand of SBME has not yet been done we performed a survey at the Amsterdam UMC to uncover existing gaps. We were also interested whether there would be any discrepancies between medical residents and clinical supervisors.

Methods

An electronic questionnaire was developed and revised by experts in qualitative research and SBME. This questionnaire was sent to all clinical supervisors and medical residents of 41 departments within the Amsterdam UMC. Questions regarding supply and demand were posed and used to identify a possible gap concerning SBME. Data were presented as counts with percentages. Further a Pearson's Chi-Square test was used for identifying differences between residents and clinical supervisors.

Results & Discussion

A total of 309 participants received the questionnaire and 154 participants responded. Received responses from participants not giving consent to use their data, from respondents not presenting their function, or responses with less than 40% completion of the questionnaire, were excluded, leading to inclusion of 142 responses (74 clinical supervisors; 68 medical residents). The primary outcome between supply and demand of SBME differed significantly (82.0% vs 66.9%, respectively, $p = .003$) between specialists and residents, while no difference was seen for supply of SBME (67.5%, clinical supervisors; 66.1% medical residents; $p = .858$).

Both groups indicate that the current general SBME offer is not sufficient: 58.1% of the clinical supervisor; 64.7% of the medical residents ($p = .315$). Looking more specific to the different elements of SBME, we identified a difference with medical residents demanding significantly more implementation of drills (56%) than clinical supervisors (26%; $p = .023$).

All other elements showed no significant difference between residents and clinical supervisors (Table 1).
To Conclude, Supply and demand of SBME within the Amsterdam UMC are in disbalance. Based on our results, SBME should be implemented more frequently in the educational curriculum according to both, medical residents and clinical supervisors.

Keywords

simulation, education, gap analysis

References/Acknowledgements (Vancouver Citation style)

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SUSTAINING ENHANCED NEAR-PEER TEACHING AND SIMULATION TRAINING USING BLENDED LEARNING

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

Introduction

Peer Assisted Learning (PAL) has been established in our facility since 2014. The pandemic, along with changes in the foundation curriculum, necessitated a revision in the way we provided the Teach-the-Teacher (TTT) program to allow our new cohort of foundation doctors, clinical fellows and teaching fellows standardised training to the level expected of a peer-assisted tutor.

Methods

Aims were to ascertain the effectiveness of using pre-recorded presentations, supplemented by an in-person small-group practical session, to train a large cohort in TTT, with an emphasis on simulation. Outcomes were the quality of PAL sessions provided as assessed by formal feedback as well as participant satisfaction with the course. In order to meet the demands of the new Foundation Curriculum, all foundation doctors now must gain portfolio evidence of formalised training and delivery of simulation. We also wanted to standardise the training given to our incoming Teaching and Clinical Fellows in order to ensure the quality of education provided. Given the numbers involved and the demands on staff during the pandemic, we endeavoured to provide the bulk of the course online, with multiple small group sessions to consolidate the simulation and debrief aspects. All sessions were mandatory, participation monitored via PageTiger software and e-booking. The sessions delivered were: Good Clinical Teaching; Introduction to the Medical Education Faculty; Leadership Skills; Supervision and Mentoring; Developing The Clinical Examiner; and How To Run A Simulation And Debrief. In total, 60 educationalists participated. Outcomes were measured using participant surveys.

Results & Discussion

Pre- and post-course feedback and evaluations were obtained will be summarised. These participants were then signed-off as tutors and went on to provide a variety of Undergraduate and Postgraduate teaching. Specific outcomes for these sessions will be summarised. The results of our GMC Survey and Queen's University Belfast feedback will be summarised.

Keywords

peer-assisted learning, teach the teacher, simulation training, blended learning, curriculum provision,

References/Acknowledgements (Vancouver Citation style)

Curriculum - UK Foundation Programme, 2021

Promoting excellence: standards for medical education and training, GMC 2022

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SOCIETY FOR
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Safety 1.5: How simulation can turn medical error into positive change

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Introduction: Background, Context and Aims

Despite an intended focus on better understanding the mechanics of normal everyday success (Safety-II, Erik Hollnagel), human medical error is still part of everyday practice. After being asked to help train a single medical team after a local serious adverse event (SAE) involving a compromised airway in one of our outpatient clinics in 2019, our simulation faculty (researchers, simulationists, medical experts) responded with a holistic approach combining immediate simulation scenario training (Safety-I) with a structured approach to find, understand, and implement best practices (i.e. Safety 1.5).

This abstract deliberately focusses on our process to translate the local urgency and willingness to learn into tangible hospital-wide improvements of everyday quality of care without elaborating on the actual SAE.

Methods

A structured and open discussion of the SAE, its local impact on the team, and the findings of the PRISM analysis resulted in three new initiatives:

1. A tailor-made on-site intervention consisting of (A) a CRM scenario training based on the SAE, with a simulated patient, for all teams (B) a revised protocol with clear and explicit tasks for everyone involved, including doctors, nurses and receptionists.
2. Monthly cricothyroidotomy course based on an existing course for ICU residents and staff. This course is open to residents and staff from the departments of Anesthesiology, Intensive Care, ENT, and General Surgery. Participants are trained by a similarly mixed multidisciplinary group of experts on technical and procedural skills using a porcine laryngeal model in our Skills Center.
3. A review of available emergency medical equipment and guidelines for all departments at risk for similar events resulted in hospital-wide removal of outdated equipment in favor of a recommended uniform emergency surgical set.

Additionally, an extended course was made available to external parties with a broader focus on emergency airway management.

Results & Discussion

We have demonstrated that SAEs can be utilized to improve quality of care beyond their immediate context. Since the SAE, hundreds of medical professionals have discussed and practiced the correct procedures, and the correct

equipment is available hospital-wide when necessary.

Despite our best efforts however, we were unable to motivate the original teams to follow-up on the single custom simulation training.

Our simulation faculty proved invaluable in this process and continue to offer their services for improvements in quality and safety in our hospital.

Keywords

Safety II; Serious adverse events; CRM; Multidisciplinary training

References/Acknowledgements (Vancouver Citation style)

We thank the departments of Critical Care, Anesthesiology, and ENT for their positive approach to learning from mistakes. In particular dr. Peter Dieperink for the initial design of the crico-course, and the willingness to expand its scope. We thank dr. Hans Delwig for his vital part in brokering collaboration between aforementioned departments.

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Schoolchildren' skills calling 112: a simulation quasiexperimental study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

More than half of all cardiac arrests occur in the out-of-hospital setting, specifically in the home and in the presence of relatives. The immediacy of the response improves survival and sequels. Thus, the scientific community supports first aid training for the entire population, identifying children and schools as the ideal environment for this training. Although the learning and skills of schoolchildren has been studied, there are no references that analyze in depth the ability to call emergency medical services (EMS). EMS call is the first link in the chain of survival, so the ability of schoolchildren to identify an emergency and make this call would improve the victim's chances of survival. Thus, the present study aims to evaluate the learning of emergency calls through innovative and interactive teaching methodologies of schoolchildren from 6 to 14 years of age.

Methods

A quasi-experimental study without a control group was conducted in 5 Spanish schools from February to May 2022. The study includes several phases: training meetings with school leaders and parents; training for physical education teachers; training of schoolchildren for 4 hours on basic life support and evaluation through a simulation scenario.

Results & Discussion

1340 primary and secondary school students participated in this study. Of these, 1295 (96.6%) recognized the emergency and made an EMS call. 90% pressed the "emergency call" button on a locked mobile phone, and 95% knew the EMS number. However, less than half of the sample (47.5%) activated the hands-free during the simulated call, and this action was less common in the lower grades. During the call, 99% gave their full name and 82% gave their full address, this being the most frequent error in the youngest participants [1st primary 98 (53.9%)].

In recent years, the teaching of CPR has transformed, introducing new complementary and virtual teaching resources (1-5)

The teaching of CPR was carried out by Physical Education teachers, as suggested by the ERC (6) and previous bibliography (7-9) and they can integrate the contents into the school curriculum (8,12). In previous studies, calling the correct number showed higher percentages (3,13) although the assessment variables and the age of the participants were different. Based on the findings of our study, schoolchildren should learn from an early age, 6 years or younger, to activate the chain of survival because they do so effectively.

Schoolchildren can correctly make a call to the EMS, although they present difficulties in activating the hands-free phone and in providing their full address.

Keywords

Competency-Based Education; Learning; Basic life support; Schoolchildren; EMS Communication Systems

References/Acknowledgements (Vancouver Citation style)

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Short Stress State and Sense of Presence in a prototype of Mixed-Reality Simulator for first aid and trauma management training

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Virtual Reality (VR) has recently attracted interest in medical education. This is likely because VR can enhance immersivity, thus strengthening medical learning[1-3]. However, one of its main drawbacks is the lack of a realistic haptic feedback, which can impact the learning process[4], specifically in the case of manual skills. Research studies on VR have focused on Mixed Reality (MR) systems, combining physical objects with VR, such that users perceive haptic feedback and perform actions in a realistic way[5].

Methods

In this study, we used a custom-made prototype of a MR simulator for first aid and trauma management training that includes a real manikin, an HTC Vive VR setup, a Leap Motion device to track the user's hand in real time, and sensors to assess trainees' performance. During the simulation, the users wear the headset and is immersed in an urban virtual environment, where a medical emergency takes place. He can interact with the simulated patient (e.g., move the stretcher, move the patient's head and arm, follow the gaze) and see a virtual representation of his hands. Furthermore, the virtual manikin is overlapped with the real one, such as the interactions are perceived as realistic (Fig.1). To test sense of presence and sensitivity to task stressors, we asked 41 individuals with backgrounds in medicine or healthcare simulation to test our simulator and fill out the Short Stress State Questionnaire (SSSQ)[6], and Igroup Presence Questionnaire (IPQ)[7]

Results & Discussion

SSSQ did not report changes related to emotions with negative meaning as depressed, sad, angry, irritated, or grouchy; but, showed action-related feeling variations (i.e. alert, active, impatient). The latter result can be explained considering that 70% of the participants does not use videogames often. In fact, they might have felt the emotions typically associated with videogames[5]. IPQ reported neutral ratings: Involvement (4.3 ± 0.73 ; range[1-7]), Experienced Realism (3.4 ± 0.7), Spatial Presence (4.5 ± 1.0), Sense of Presence (4.8 ± 1.3). A possible explanation is that if on one hand the combination of virtual and real objects overlapped can enhance sense of presence[5], on the other hand, it can cause mismatches in the user perception, as some objects are both virtual and real, while others are not[8]. In conclusion MR

simulators seem to be promising tools to enhance medical training; however, research on sense of presence in MR is still sparse[9], and further experiments are needed to assess both the role of previous VR experience and user's background, and the importance of virtual-real correspondence.

Keywords

medical training, mixed-reality, virtual reality, trauma management training

References/Acknowledgements (Vancouver Citation style)

We thank: Beatrice Lastrico and Letizia Cerutti for their help in analyzing the data. Giorgio Carlini and Paolo Rossi for support in the design and development of the hardware part. Asim Hameed for his help in choosing questionnaires.

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SOCIETY FOR
SIMULATION IN EUROPE

SimInPath: Mobile Application to Assess Skills in Pathology

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

As an academic subject, Pathology is eminently theory based, and is routinely assessed in this fashion. The objective of this project was to design a nonprofit application for mobile devices to assess competencies or practical skills in Pathology.

Methods

There was an initial phase of development for the application and a second phase for testing. A template for evaluation was created and included the most relevant descriptors for each stage for the following skills: macroscopic dissection, palpation of lesions suitable for fine needle aspiration (FNA), FNA, and ultrasound-guided FNA (USFNA). For every module, each item could be evaluated using a Likert scale checklist. A free-text field was also created to allow evaluators to include additional observations, while times for completing the different modules were registered. During the testing and evaluation phase, two evaluators (a pathologist and a nurse, histotechnician in training) assessed performance of a group of international medical students (n=7), after previous training in the skills with flipped classroom and simulation-based methodology. Inter-rater concordance analysis was performed using the kappa coefficient.

Results & Discussion

A private company was hired to develop the SimInPath® (Simulation in Pathology) application, which took 8 weeks to complete. The application became available for download through the GooglePlay (Android) and App Store (iOS). It was determined that the nonprofit application would be free to download, dispensing with advertising content.

Students completed the training and were evaluated, obtaining scores between 8,5 and 9.2 out of 10 (average rating of two evaluators). The overall inter-rater agreement between faculty was substantial ($k=0,752$ $p<0.001$), being perfect for the dissection module ($k=1$), followed by the USFNA ($k=0,752$), the FNA ($k=0,748$), and the palpation module ($k=0,508$).

Conclusions:

- The SimInPath® app for mobile devices to assess practical skills in Pathology was designed and launched.
- This tool could be used to implement simulation-based medical education in medical school or during residency, and, indeed, it could be used in the objective structured clinical examination (OSCE) assessment formats. In addition, due to the agreement between evaluators found, different professionals could act as evaluators.
- In addition, it could provide greater visibility of pathologists' work and increase students' interest in Pathology.

Keywords

App; Skills; Assessment; OSCE; Evaluation; Pathology

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

SimLab: An ethnographic case study of a Cultural Historical Activity Theory formative intervention to improve emergency care preparedness in General Practice.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

The critical nature of emergencies requires General Practice (GP) practices to provide a prompt patient-centered collaborative approach. However, emergencies do not happen frequently enough for staff to gain and maintain such competencies.

In-situ simulation (ISS), simulation training in working clinical environments, is documented as an acceptable and feasible way to train for GP emergencies. However, further studies are required to explore whether ISS can result in practice change(1).

Little research attention has been directed to the role of theoretical models in facilitating a collective creation of knowledge and learning with ISS(2). Cultural Historical Activity Theory (CHAT) is a useful methodological framework to study practice-based learning in complex learning environments(3). The lens of CHAT was applied to an ethnographic case study to gain a deeper understanding of organizational change brought about by an ISS training model of emergencies.

Methods

Change Laboratory (CL) is a formative intervention method developed for studying workplaces in transition and generating improved, shared patterns of activity(4). A smaller scale adaptation of a CL, 'SimLab' was developed for the busy GP workplace.

An interprofessional team participated in the 'SimLab' which included four workshops (Figure 1). Workshop (I) involved a 'mocked-up' paediatric ISS. Afterwards, participants were provided with a summary of recognised best practice, researchers facilitated participants in mapping workplace activity to CHAT framework and identified contradictions. In Workshop (II), through collaborative activity participants identified accumulated historical tensions and devised a future model to resolve contradictions(5). Workshop (III) involved a different ISS followed by a discussion to explore if the changes had enhanced their emergency response. During the fourth workshop the team discussed if the elements of their newly modelled system had become established. Qualitative data collection methods included focus group recordings, video footage and participant reflection diaries.

Results & Discussion

CHAT enabled a deeper exploration of the complex relationship of ISS and real-world clinical practice(6), enabling participants to take a systemic perspective by examining rules, division of labour, and tools that mediate workplace learning(7). Between activity system elements challenges occurred, reframed as opportunities, they enabled contradictions to act as potential levers for effective organisational change.

The use of ISS provided real life contextuality, identified latent threats and has the potential to transfer well into practice enhancing the degree of preparedness for such time-critical, low-frequency, and high-morbidity events. This research demonstrates how CHAT can provide a theoretical lens and approach to guide ISS in healthcare(2) to bring about organizational transformation for emergency care.

Keywords

General Practice

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

SimNEXT: Lifelong learning for simulation professionals

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

In the Netherlands, many people involved in simulation-based education are clinicians who combine their busy clinical work with roles as simulation instructors or facilitators. Those who act as simulation educators are typically enthusiastic professionals, but their competencies regarding the design and delivery of effective simulation-based education vary greatly. Some are well-trained teachers, others have only learned by doing, and others are unconsciously unskilled despite their best intentions. Opportunities for formal training are available but limited to short multi-day courses. For those educators who want to take the next step and stay up to date on their knowledge, skills, and attitudes regarding high-quality simulation training based on solid theory and the latest insights, there are no evident learning opportunities available.

Methods

The Dutch Society for Simulation in Healthcare (DSSH) and the Maastricht UMC+ Simulation Center, in collaboration with Maastricht University's School of Health Professions Education, aim to fill this gap with a structural continuous professional development program with the name SimNEXT. A design team was formed consisting of representatives from four institutions with simulation expertise in the Netherlands. The team has conducted a needs analysis, task analysis, and learner analysis and created a blueprint for a flexible, modular lifelong learning program. We sought input from our network of experts in the Netherlands and several members of the international community – even at last year's SESAM conference in Sevilla. In this presentation, we will cover the journey of the design team so far and the thought processes going into the major design decisions. We will share the results of a pilot study of our first module and look ahead to upcoming design activities.

Results & Discussion

This presentation provides insights into how we approach the development of a national continuous professional development program in the Netherlands. Discussing perceived strengths and potential limitations is informative for all audiences interested in faculty development and train-the-trainer programs. Besides informing the audience, we are also exploring opportunities to collaborate with other international faculty development initiatives, for example on designing joint modules, sharing or co-developing materials, or simply exchanging ideas. We are actively looking to tap into the collective knowledge of the SESAM community to learn from best practices and bring simulation professionals to the (Sim)NEXT level.

Keywords

faculty development

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Simulation Education Programme Meeting Individual Needs for Anaesthesia Residents

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

The competences and gaining of special hard and soft skills gradually develops during the course of residency in anaesthesia and intensive care practice. The personal growth is not equally the same for each resident. To reflect the individual needs and to identify the personal weak points we developed an individualised focused curriculum.

Since simulation medicine can provide a strong tool to gain more advanced skills, we introduced a simulation based programme for anaesthesia residents.

Often, there is a difficulty to set the appropriate and most suitable learning points. Some of them are obvious but some arise unexpectedly and have not been taken into account when designing the simulation based lesson. Consequently, the trainee's needs may not meet the desired learning points thus the strength of the immersive learning is partially missed.

As the residents gain skills and improve throughout the curriculum each next simulation session is tailored exactly to meet their individual needs

Methods

The method is based on continuous data capture and analysis. The simulation curriculum consists of 3 sets of scenarios according to their complexity advancing from the basic ones to more complex ones. We designed a questionnaire that is

filled in by the trainees immediately after the simulation session. It is not anonymous with all answers going to the individual's card.

There are three major areas covered by the questionnaire. The medical capabilities, confidence in Crisis Resource Management (CRM) skills, the meet of expectations.

The individual cards, with a list of given scenarios and the participants feedback on the sessions, are analysed. The next simulation session is designed according to the previous questionnaire analysis.

Results & Discussion

Modification of the curriculum, based on detailed and structured analysis of individual needs, allowed us to focus on weak areas in resident training. The learning points of each simulation can be adjusted to meet the participant's needs, thus allowing greater efficiency of knowledge and skills learned from each simulation. We also saw a beneficial side effect. Individualised training increased motivation to self-learning and facilitated the incorporation of CRM principles in everyday practice and in total increased healthcare safety.

Keywords

anaesthesia, individual needs, curriculum, learning points, analysis

References/Acknowledgements (Vancouver Citation style)

N/A



SOCIETY FOR
SIMULATION IN EUROPE

Simulation Module for Palpation of Fine Needle Aspiration-Suitable Lesions. Validation Study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

Physical examination continues to be essential in clinical diagnosis given its accessibility, positive effects on patient management, and cost reduction. Adequate examination is a basic prerequisite for performing fine needle aspiration (FNA) technique on palpable lesions. With the goal of contributing to medical student and resident training, a simulation module to train and assess the skills needed to palpate FNA-suitable lesions was designed.

Methods

Taking advantage of the FioNA® simulator for FNA and, having detected limitations in “the art of palpation”, modifications on the original model were made, through the design of handmade simulated lesions with the aim to create different scenarios (neoplasms, cysts, and adenopathies) and provide a variety of tactile sensations regarding shape, size, consistency, demarcation, and movement. The palpation module was evaluated for face and content validity by 30 specialists (9 pathologists, 5 otorhinolaryngologists, 6 internists, 2 oncologists, 5 surgeons, 2 dermatologists, and 1 intensivist), all of which work at university hospitals. Additionally, 23 third-year medical students were assessed after receiving basic theoretical training in palpation.

Results & Discussion

The outer aspect (appearance, location, degree of realism, and tactile sensation) of the modified version of FioNA® for acquiring palpation competences received an average rating of 8.9/10 (σ 0,78); the item that received the lowest valuation was the feeling when palpating (8.4/10; σ 1.9). The educational value (use for training, variety of exercises, and preparation for real-life procedures) was validated by all of the specialists. All but one of the physicians rated the variety of exercises as adequate. Moreover, the simulator was perceived as intuitive (9.2/10).

Regarding the evaluation of the students, the average score obtained was 3.6/5 (range 1.2-4.6; σ 0.97), obtaining an insufficient result (score less than 2.5) only 4 of them.

Conclusions:

- It is possible to adapt a palpation module to the FioNA® simulator for skills assessment.
- This study showed face and content validity of this prototype for exploratory purposes.
- Given that FNA is a routine medical procedure, formal training to acquire palpation skills seems appropriate.

Keywords

Fine Needle Aspiration; Palpation; Physical Examination; Validation; Palpation; Lumps

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Simulation Teaching for the Gatwick Detainees Welfare Group - Supporting Refugees with Mental Health Needs

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Gatwick Detainees Welfare Group work to support and advocate for people who are detained within the Brook House Immigration Removal Centre, Gatwick.

We created one workshop training day and one half-day live simulation centred around improving the understanding of mental health conditions common to people who have experienced immigration detention. We worked directly with the Gatwick Detainees Welfare Group Senior Advocacy Coordinator to develop a bespoke curriculum, reflecting the need for mental health skills and literacy for case workers and volunteers.

Methods

The full day online workshop was delivered once to a group of 8 participants. The face-to-face half-day simulation was delivered once to a group of 10 participants. The participants were a mix of case workers and volunteers from a diverse professional background who currently work for the Gatwick Detainees Welfare Group.

The learning objectives included improving confidence, knowledge and skills relating to working with adults experiencing trauma, psychosis, low motivation and depression. We included how to assess risk and how to escalate risk concerns. Team development objectives were how to manage one's own emotions within a distressing situation and the importance of self-care and wellbeing for oneself and the team.

In the delivery of the simulation training, psychological safety was first established by group ice-breakers and a didactic introduction to simulation training. This was followed by 3 scenarios covering the following topics: managing low motivation from a service user/detainee; assessing low mood and suicidality; communicating with someone experiencing high psychological distress and possible psychosis. Participants volunteered to enter a simulation with a prebriefed actor while the remainder of the group watched by video link. We used the modified Pendleton's debrief model to give feedback to participants on their contribution and assist them to learn positively and constructively from the experience.

Participants were asked to complete a pre-course and post-course questionnaires rating their knowledge, confidence and human factors skills.

Results & Discussion

In the workshop, 27.3 % attendees reported an increase in knowledge, skills and confidence (n = 8). In the simulation, there was a 15.1% increase in knowledge, skill and confidence (n = 10) for participants and a 16.3 % increase in human factors skills (n = 9).

We did not perform statistical analysis on the data due to our small group size.

Further delivery of this programme for case workers in UK detention centres may aid in providing more data to assess this training.

Keywords

Detention Centre, Refugee, Asylum, mental health, motivation, team work, communication, human factors

References/Acknowledgements (Vancouver Citation style)

Thanks to Martha Otega Vega, Maudsley Learning for assisting in abstract submission.

Thanks to Karris Hamilton, Senior Advocacy Coordinator, Gatwick Detainees Welfare Group for contribution to course development.



SOCIETY FOR
SIMULATION IN EUROPE

Simulation and Safety – A Novel Medical Undergraduate Teaching Module

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Introduction: Background, Context and Aims

Simulation-based education can play a valuable role in identifying and addressing factors that contribute to patient harm in healthcare. However, simulation continues to be underused for this purpose. Furthermore, there has been a lack of adaptation in medical undergraduate curricula to reflect this gap. We have designed a novel undergraduate student-selected module for 4th year medical students lasting five weeks, which will be piloted in the coming weeks.

Methods

Educational Objectives:

1. Identify the main components of simulation design
2. Explain the importance of psychological safety in simulation
3. Describe factors in healthcare that can contribute to patient harm
4. Analyse data related to adverse event reporting in local hospital
5. Discuss the role of simulation-based education in improving patient safety
6. Design and run a pilot simulation scenario targeted at improving patient safety

Learning strategies:

- 5 Tutorials:
 1. Simulation design
 2. Psychological safety and Simulation Fidelity
 3. Practical elements of running a simulation session
 4. Decision-making and Error (Interactive session with tabletop simulation and non-medical tactical decision game)
 5. Quality and Governance
- Data analysis on adverse event reporting in local hospital
- Participation in simulation courses
- Self-directed learning resources (research papers, podcasts, e-learning module)

Module Overview:

Students will gain experience of simulation-based education and its use in healthcare. They will get direct experience of the components of simulation course design and its delivery to healthcare practitioners.

They will explore the role of simulation-based education in improving participant performance in tasks or domains that impact upon patient safety. They will do this in conjunction with data analysis on the components that have driven errors or near-errors at the local hospital.

They will get the opportunity to design and run a simulation scenario with staff at the Simulation Centre. This will be focused on addressing patient safety, although the student will have the opportunity to explore their own interest within this.

Assessment will consist of an oral presentation (20%), original simulation scenario design and delivery (40%), two written reflections (20%), and supervisor judgement (20%).

Results & Discussion

Introducing this module will enable us to formally integrate the role of simulation as a safety tool into our undergraduate medical curriculum. Further work is looking at including nursing and pharmacy students into this undergraduate module, for an interprofessional collaborative approach to safety and simulation.

Keywords

patient safety, undergraduate

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Simulation based learning designed with a systems approach to enhance induction for general practice trainees.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

Authors

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Introduction: Background, Context and Aims

Many trainees commencing General Practice (GP) training have little experience of GP systems due to completing foundation training in hospital settings. Systems in GP vary with different policies, protocols and processes. GP trainees need an induction programme to orientate them to their new work setting. There has been little face-to-face training during the coronavirus pandemic reducing peer support and locally trainees reported high levels of isolation and low morale. A 'GP emergencies' simulation course was developed, delivered and evaluated to support trainee induction and improve trainee wellbeing.

Methods

Four scenarios were designed using the Systems Engineering Initiative for Patient Safety (SEIPS) framework to highlight important system factors relevant to work in a GP setting. One scenario (patient with hypoglycaemic episode) focused on practice organisation factors. A second scenario (baby with meningococcal septicaemia) on tasks such as medicine administration. The learning outcomes of the third scenario (patient with anaphylaxis) related to technology and tools. The fourth scenario (a home visit with opiate overdose) explored environmental factors. Debriefs highlighted interactions between different system factors using the SEIPS framework.

Scenarios were adapted to reflect cultural events such as Ramadan, and the meningococcal rash was adapted for various skin types.

Evaluation immediately following and at six weeks after the session explored changes in knowledge, skills, confidence, and behaviours that may increase patient safety. In addition, impact on practitioner wellbeing and morale were assessed.

Results & Discussion

Trainees reported benefits from this course as part of their induction to practice as it highlighted key difference between primary and secondary care. They reported improved confidence and knowledge recognising and responding to emergencies and improved skills using equipment in a GP setting. They described adapting systems in their own practice such as creating emergency equipment checklists. Although an improvement in wellbeing was not noted, improved morale from sharing experience was reported. Reported reduction in feelings of isolation was noted. A learning need for identifying skin rashes on patients with darker skin was identified. Review of the literature and educational resources revealed difficulty identifying pictures of this rash on such patients. Learning resources can be

developed.

Future work will develop scenarios to support learning in other areas to which GP trainees have less exposure. This includes emergency scenarios with communication barriers, and psychiatric emergencies in primary care, which specifically highlights learning on complex interacting factors within primary care systems.

Keywords

Systems Approach, General Practice, Emergencies, collaboration

References/Acknowledgements (Vancouver Citation style)

Thanks to Neil McGowan, Associate Director Medical Education (Simulation) Greater Glasgow and Clyde NHS



SOCIETY FOR
SIMULATION IN EUROPE

Simulation-Based Mastery Learning Training Curriculum for Ultrasound Guided Interventional Radiology Procedures

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Interventional radiology (IR) is an efficacious, safe and minimally invasive alternative to conventional surgery. The success of IR procedures rely on interventional radiologists' ability to interpret diagnostic images to guide and manipulate surgical apparatus in the body through small surgical incisions. IR training currently follows the apprenticeship model, not linked to a robust curricular framework and requires significant resources, including mentored training time, longer operative times, and the potential harm to patients. Simulation-based medical education (SBME) successfully contributes to quality health professions education¹, and is an effective educational model in improving IR trainee competency². SBME provides the learner with the opportunity to practically implement their IR knowledge through the use of physical simulators; where the stakes are lower than those in the surgical environment and there is the opportunity to fail-safely while ensuring patient safety³.

Methods

This work describes the development of a simulation-based training curriculum for ultrasound guided IR procedures through Simulation Based Mastery Learning (SBML). This approach incorporates anatomically correct interactive simulation models at various stages of complexity. To design the curriculum and the training devices, the critical performance steps of IR kidney procedures were identified through cognitive task analysis (CTA) and a Modified Delphi Process consensus building activity illustrated in figure 1. Mastery learning is a competency-based approach to learning. It is learner centred and focuses on the achievement of a standard without curricular time constraints; learners acquire, competencies, measured and compared with fixed achievement standards, without limitations on time⁴. There are seven features to mastery learning⁴, and the fourth feature relates to standard setting and is an essential facet of mastery learning. Standard setting should be rigorous and evidence informed. Mastery Angoff standard setting method⁵ employed in this study determined the minimum passing standard (MPS). The Mastery Angoff technique is also a consensus process that requires experts to judge the percent of learners who would achieve a threshold score on a checklist of items, and can do the procedure safely and independently for patient care⁶.

Results & Discussion

The curriculum was designed around the critical competencies that were identified from the Modified Delphi/CTA process. Commencing curriculum design while the IR experts engaged in the consensus process and the standard setting activities provided affordances and enabled an ongoing dialogue between the IR experts and the research team, thus enabling refinement during the evolution of the curriculum.

Keywords

Simulation-Based Mastery Learning, Health Professions Education, Modified Delphi, Cognitive Task Analysis, Interventional Radiology, Ultrasound Image Guidance, Simulator Training Device

References/Acknowledgements (Vancouver Citation style)

Acknowledgements

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SOCIETY FOR
SIMULATION IN EUROPE

Simulation-based training program for PICC insertion: Randomized comparative study of synchronous direct feedback versus asynchronous distance feedback.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

Authors

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Introduction: Background, Context and Aims

Simulation training with deliberate practice has shown to be effective for procedural skill training (1,2). To find more cost-efficient training, delivering feedback remotely and asynchronously has been explored (3). The effectiveness of this type of feedback has not been evaluated for peripherally inserted central catheters (PICC). The objective of this prospective randomized study is to compare 2 different feedback techniques for this procedure: Synchronous direct feedback versus asynchronous distance feedback.

Methods

Prior approval of the institutional ethics committee, 40 anesthesia and internal medicine residents were recruited. Residents reviewed the instructional material in an online platform and performed a pre-training assessment (PRE), which consisted of a PICC insertion in an ultrasound guided part task trainer.

Residents were randomized to 2 types of training:

- Practice with direct synchronous direct feedback (SYNC). The instructor was present and giving instructions in real time throughout all the session (traditional face-to-face modality).
- Practice with asynchronous distance feedback (ASYNC). The resident practiced alone, the instructor was not present and provided feedback asynchronously through the C1DO1 platform (Figure) (3).

Training consisted in 4 practice sessions, lasting one hour, distributed weekly. At the end of the training, both groups underwent a post-training evaluation (POST). PRE and POST assessments were videotaped to be evaluated by two independent and blinded reviewers, who rated the resident's performance using a previous validated global rating scale (GRS) (4).

A non-parametric data distribution was assumed. Wilcoxon ranks and Wilcoxon signed ranks were used. Kappa coefficient was calculated for interobserver agreement. A p value of 0.05 was considered.

Results & Discussion

35 residents completed the training and both evaluations. Demographic data show no difference. Inter-rater reliability of the video GRS scores had a Cohen's kappa of 0.81.

There were no differences between both groups in the PRE assessment, with a median of 28 points in the SYNC group and 26 in the ASYNC group ($p= 0.56$). Both groups significantly improved their GRS scores after four sessions: SYNC improved from 28 to 45 points ($p < 0.01$); the ASYNC group improved from 26 points to 46 points ($p < 0.01$). We found no significant differences between the groups in POST assessment ($p= 0.31$).

Conclusion:

This simulation-based training program significantly improves residents PICC placement skills with both modalities (synchronous and asynchronous feedback). The asynchronous feedback training modality seems to be a comparable alternative to traditional face-to-face training methodologies, opening a new and innovative possibility for teaching procedural skills in healthcare.

Keywords

Procedural skills; PICC placement; vascular access; ultrasound-guided; simulation-based training; Distance-Based Simulation.

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SOCIETY FOR
SIMULATION IN EUROPE

Simulation-based mastery learning for chest drain insertion: impact of booster session timing and interim clinical exposure on confidence for internal medicine trainees

Format: Research Studies - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

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Introduction: Background, Context and Aims

The internal medicine training simulation strategy in Scotland includes simulation-based mastery learning (SBML) for chest drain insertion in the first and second year of the training programme. It is a skill that internal medicine trainees lack confidence in performing. Confidence impacts willingness to undertake procedures (1) with a lack of confidence leading to avoidance of practising technical skills in the workplace.(2) Self-efficacy can positively influence the successful transfer of training of skills to the workplace. SBML assists in the acquisition of procedural skills supporting learners to achieve an agreed standard.(3,4) Booster sessions may be required(3) and debate remains as to the ideal timing. Previous meta-analysis of skill decay literature identified substantial loss of skill after one year of non-use.(5) This study aimed to determine if trainees who had a less than one year interval between initial and booster sessions, had a significant advantage over those with a greater than one year interval. It also aimed to determine the impact of interim clinical experience on trainee confidence.

Methods

Following ethical approval, Internal Medicine Trainees in Scotland completed surveys pre- and post- initial and booster SBML sessions regarding confidence and clinical experience with chest drain insertion. Data were matched for trainees across the two sessions and analysed using paired sample t-tests. Student's unpaired t-test was used to compare the short interval (less than 12 months) and long interval (12 months or more) groups and the impact of interim clinical experience was assessed using Analysis of Variance.

Results & Discussion

A total of 74 trainees had complete datasets from surveys for analysis. Of which, 33 had successfully inserted a chest drain in clinical practice between sessions Mean confidence in chest drain insertion increased following initial SBML, fell between initial and booster session, and increased again following booster session ($P = < 0.001$). Fall in confidence was not significantly affected by the time interval between training sessions but was mitigated by interim clinical experience. There may be an argument to consider reducing the interval between sessions for trainees who have not had the opportunity to perform chest drain insertion in clinical practice. Although SBML, both initial and booster sessions, improved trainee confidence in chest drain insertion, there is evidence of interim confidence decay, possibly due to a

lack of clinical experience between sessions. Barriers to transfer of skills from simulated to real-world environments must be explored to maximise success of training efforts.

Keywords

Internal medicine, Simulation-based mastery learning, Chest drain, Transition from simulation to practice

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SOCIETY FOR
SIMULATION IN EUROPE

Singapore Medical Students' Perspectives on Receiving Feedback from Simulated Patients

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Debriefing

Authors

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Introduction: Background, Context and Aims

As we move towards the endemic phase of Covid-19, simulation-based education in Singapore continues to face challenges on the availability of clinical educators to teach and provide feedback to learners. To address this deficit, Duke-NUS Medical School tapped on their Simulated Patients (SPs) to fill the void. As feedback is essential for effective learning experiences (1), SPs give time and attention to facilitate the learners' ability to reflect on the experience and improve their clinical practice. However, it has been observed that Asian students seem to be particularly keen to quickly reach the 'essence of the matter', being told what was not done to expected standards and which are expected best practices that should be adopted (2). This story shares the experience of the team exploring the perceptions of final year medical students in Singapore towards receiving feedback from these atypical educators in their learning journey.

Methods

The primary aim of the SP encounter series was to provide students an opportunity to practice clinical reasoning, verbal and non-verbal communication skills, and professionalism. Prior to the encounter, SPs were trained not only to portray their character but also on how to provide feedback. At the end of each encounter, the SP asked students questions that encourage reflective practice related to communication skills and professionalism whilst providing the students with actionable feedback based on their performance. In order to understand students' perspectives on the SP-led session's contribution to their learning, they were invited to participate in a post-session survey consisting of 16-item questions with quantitative (5-point Likert Scale) and qualitative (open-ended questions) measures.

Results & Discussion

Feedback from our students was positive with 94% agreeing that SP feedback led them to reflect on their behavior and attitude towards patient care. When asked about how the conversation contributed to their learning, qualitative responses such as "It provided insight in our behaviors that we would otherwise not be aware of when focused on doing a task" suggest that the feedback from the patient's lens, provided by the SP, was incredibly powerful, and a lens that our clinical educators cannot replicate. This experience has shown that SPs can be a valuable resource as providers of significant actionable feedback to learners. During this stage we focused on preparing our SPs on how to give feedback, what we would like to improve on is to provide our learners with materials that can prepare them on how to receive feedback from SPs.

Keywords

Simulated Patients, Feedback, Singapore Medical Students, Patient Encounter

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Skills acquisition for newborn resuscitation after Helping Babies Breathe (HBB) simulation training in 12 health facilities across two regions in Tanzania – the SaferBirths Bundle of Care (SBBC) program

Format: Research Studies - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

Authors

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Introduction: Background, Context and Aims

Skilled newborn resuscitation of non-breathing babies is crucial for survival. Previous HBB skills training interventions using basic newborn simulator have shown immediate improvements in skills; however, skills decayed with time which is associated with poor newborn outcome. In order to address this gap, SBBC was introduced in five regions in Tanzania to reduce newborn deaths by conducting in facility low dose high frequency simulation-based skills training (LDHF-SBT) using improved training and clinical tools, and continuous quality improvement based on facility data. The aim of this study was to assess effects of simulation-based training using innovative tools on skills acquisition among HCWs immediately after a one-day training in Shinyanga and Geita regions, Tanzania.

Methods

A one-day facility-based training was conducted using the Helping Babies Breathe (HBB) 2nd edition HCWs in labor ward and obstetric theatres in 12 facilities across Geita and Shinyanga regions were trained using an improved newborn simulator (NeoNatalie Live), upright bag/mask resuscitator, and newborn heart rate monitor (NeoBeat). Skills scores were evaluated immediately after the one-day course using objectively structured clinical evaluation (OSCE) A and B which are WHO approved tools for assessing skills on routine newborn care and resuscitation developed by American Academy of Pediatrics. Data was analyzed using SPSS version 23.

Results & Discussion

A total of 479 HCWs were trained between November 2021 and January 2022. Immediately after the training, mean score for OSCE-A and OSCE-B were 92.2±8.3% and 92.8±6.1% respectively. Mean scores for OSCE A for health centers, district hospitals, and regional referral hospitals were 89.7±9.2%, 92.7±7.8%, and 93.7±7.6% respectively. There was a significant mean score difference across health facility levels ($F(2) = 8.9, p < 0.001$). On post hoc pairwise comparison, district and regional hospitals had significantly higher scores compared to health centers ($p = 0.03$ and $p < 0.001$ respectively). Likewise, mean scores for OSCE-B were 91.7±6.7%, 93.7±4.6%, and 92.5±7.2% for health centers, district hospitals, and regional hospitals respectively. There was a significant difference in OSCE-B mean scores across health facility levels ($F(2) = 4.5, P = 0.01$). On post hoc pairwise comparison, district hospitals have significant higher mean score compared to health centers ($p = 0.01$).

A simulation-based training using innovative tools was associated with adequate skills acquisition among HCWs. However, providers achieved different levels of skills between facilities with district and regional hospitals achieving

higher scores than health centers. These findings indicate that SBT using improved tools is effective in newborn resuscitation skills acquisition among HCWs at baseline, and if LDHF-SBT is well implemented, has the potential to maintain the skills among HCWs. However, for the intervention to be more effective, further exploration of factors for differences across the facilities and mitigation strategies are warranted during the implementation of SBBC.

Keywords

Helping Babies Breathe, newborn, resuscitation, simulation

References/Acknowledgements (Vancouver Citation style)

All supporting staff in the SaferBirths Bundle of Care, Geita, and Shinyanga Regional Medical Officers, and all healthcare providers who participated in the trainings



SOCIETY FOR
SIMULATION IN EUROPE

Software to design, perform, and assess collaborative clinical scenarios for medical students

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Background: In March 2020, the World Health Organization (WHO) declared COVID-19 a pandemic 1, which directly affected traditional teaching in medical schools worldwide 2,3. As a result, particularly in Chile, at the beginning of April 2020, classroom training activities were suspended in all universities, and students' clinical practices were disrupted by the collapse of public and private hospitals 4. Medical schools had to reconvert face-to-face theoretical activities (lectures, seminars, workshops) into online activities 5. In addition, they began to design a strategy to continue with the practical training of students, considering new methodologies and distance technologies 6,7.

In addition, the clinical simulation centers of most universities, where an essential part of practical learning takes place, remained closed for the whole of 2020 and 2021. Therefore, there was a need to convert as many simulation training activities as possible to the telematic mode by videoconference 2. In this scenario, web-based platforms were maintained as a safe training environment for students and medical schools. This new educational environment should include consolidating and adapting didactic sessions by creating and using the available virtual cases and different web-based platforms.

Objective: Design and develop a web platform to create, perform, and assess collaborative clinical scenarios for medical students.

Methods

Methods: The design of the web platform was aimed at supporting the creation, execution, assessment and debriefing of clinical cases by incorporating functional and non-functional requirements needed to run collaborative and individual sessions by the Internet. The software was developed under the Model-View-Controller architecture to separate the views from the data model and the business logic.

Results & Discussion

Results: MOSAICO is a web platform to design, perform, and assess collaborative clinical scenarios for medical students. MOSAICO has four modules: educational design, students' collaborative design, collaborative simulation, and collaborative debriefing. Three different user profiles: academic simulation unit, teacher, and student. These users interact under different roles in collaborative simulations. MOSAICO enables a collaborative environment (connected by the Internet) to design clinical scenarios guided by the teacher and use all data generated for discussion in the debriefing session with the teacher as a guide.

Discussion: MOSAICO web was implemented and is used frequently in different simulation sessions at the University of Talca, where medical students can work collaboratively with the Internet. The web platform supports all the stages of the CCS model, and the teachers use MOSAICO as technological infrastructure to schedule, design, and execute the simulation activities.

Keywords

Web Platform, Collaborative Learning, Clinical Simulation

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SOCIETY FOR
SIMULATION IN EUROPE

Speak-Up in Interprofessional Teams Strategy (SUITS)

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

The Martini Hospital (MZH) and the University Medical Center Groningen (UMCG) from the Netherlands joined forces and developed and tested the educational program: 'SUITS', Speak-Up in Interprofessional Teams Strategy. The main goal is to strengthen efficient and safe behaviors in speaking-up in teams.

Methods

According to the World Health Organization (WHO) on average, an estimated one in 10 patients is subject to an adverse event while receiving hospital care in high-income countries. Despite differences between countries and hospitals, generally patient care is complex and making errors is Human. To this 'speak-up behavior' ('SUB') seems a key success factor, for example in preventing and mitigating potentially unsafe events which may harm patients. In hospital practice it seems hard to show efficient and safe behaviors in speaking up. To this several mechanisms/antecedents play an inhibiting role. Some of them in general contribute to negative attitudes towards SUB. As a result this may lead to avoidance behaviors, such as silencing.

SUITS is enveloped by a pre-post-test to assess the effects on outcome measures related to speak-up on patient safety concerns (SUC-safe) and unprofessional behavior (SUC-prof). SUB. For example self-efficacy and social network formation where used as variables related to speaking-up.

SUITS starts with an e-learning module on SUB and is followed by a simulation session to practice and debrief on SUB. To transfer and guide learning processes in SUB in teams in daily practice, team coaching is carried out and facilitated by specially trained peers. A core activity is to debrief and reinforce positive behaviors in SUB from 3 roles: actor, receiver and bystander. Thereby team and medical leaders are coached in behaviors to stimulate and support SUB in teams.

Results & Discussion

Results: SUITS is comprised of multifaceted educational methods to reinforce efficient and safe behaviors in SUB. Especially knowledge from social psychology is incorporated. Our approach is fundamentally based on shared health governance (SHG). The medical- and nursing board have a leading role to empower organizational policies and colleagues in efficient and safe behaviors in speaking-up. Evaluations/results are available at SESAM-congress. Discussion: Multifaceted educational methods and pre-/post testing is carried out to strengthen SUB in teams and support the development of SUITS. Thereby SHG is used as strategy for hospital policies and empowerment of

healthcare staff in SUB. By doing so we expect to guide healthcare staff to higher levels of team performance in speaking-up in order to strengthen patient safety.

Keywords

Human Factors, Interprofessional healthcare teams; education & reserach; psychology

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Staged Debriefing in Simulation Training in Medical Education for Competencies Formation

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Debriefing

Authors

Nataliia Lopina

Director of the Simulation Training Platform "The Global electronic database of clinical cases simulation scenarios - ClinCaseQuest"

Introduction: Background, Context and Aims

There is a large number of medical errors in the world even in the countries with a high level of economic development. Evidence on medical errors shows that 50% to 70.2% of such harm can be prevented. We need to improve the availability of simulation training. It is necessary to widely implement simulation training not only in undergraduate medical education but also in the postgraduate stage.

We must take into account two conceptually important directions in organizing simulation training. On the one hand, it is important to provide an objective structured assessment of knowledge and competencies, and on the other hand, it is important to form competencies. We must keep a balance between these two concepts, and while assessing, do not forget about the formation of competencies. We must introduce differentiated simulation training, depending on what goal we are pursuing at the moment: competency assessment or formation.

Methods

For developing the methodology for simulators of clinical cases, we used the classification of medical errors, international guidelines, primary data of real patients who have signed informed consents, the Calgary-Cambridge guide to the medical interview, and basic principles of interactive learning scenarios, and programs for medical education. We developed cognitive branching technology for building learning scenarios of clinical cases that facilitate the formation of competencies based on staged debriefing [1, 2]. At the same time, we created simulators for an objectified structured assessment of competencies. During the year, we analyzed user interests and the dynamics of passing different formats of simulation training in our platform.

Results & Discussion

We have identified two areas in simulation training - examination and training. The peculiarities of the exam mode of simulation training are: allowing to make mistakes and skip further, not giving feedback during the training, not making returns until everything is done correctly, do not providing cognitive support at every stage. In such a way errors accumulate and are carried to the debriefing, only after the results we can provide cognitive support. This regimen is preferred for competency assessment. The peculiarities of the simulation training with branching are: allowing to make mistakes but not skip further until they are eliminated, giving feedback on every stage, and returning back many times until everything is done correctly. We provide cognitive support at every stage, so errors do not accumulate and are carried to the debriefing. This regimen is preferred for competency formation with staged debriefing. Clinical cases with staged debriefing based on first interview results from the beta users of the Simulation Training Platform confirmed the advantages of undergraduate medical education in this methodology.

Branching clinical cases scenarios were more interesting for undergraduate medical education for deep involvement in the clinical situation. For postgraduate medical education, preference was given to interactive simulators of clinical

cases. The exam mode of the simulator will be preferred for the assessment of knowledge and competencies. The training mode of simulation training with branching for repeated training until the necessary competencies are fully mastered will be preferred for the formation of competencies. We should implement differentiated simulation training in both undergraduate and postgraduate medical education.

The implementation of the staged debriefing for the clinical case simulators could help to form competencies. staged debriefing can be used in complex clinical cases.

Keywords

Simulation Training, Virtual Patients, Staged Debriefing

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SOCIETY FOR
SIMULATION IN EUROPE

Students' experiences with Virtual Reality simulation for soft skills in higher education for healthcare and social work

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Virtual reality (VR) provides students in higher education opportunities to practice complex and challenging situations without risking clients, patients or themselves. Thus, VR is gaining ground in clinical skills training in healthcare and medical education. However, a research gap exists regarding how VR simulation might facilitate non-technical and soft skills. This study is part of a larger interprofessional project that is developing, testing and evaluating a VR simulation programme for non-technical and soft skills for healthcare and social work students in a Norwegian higher education institution.

In the larger study, 360° movies were developed for students to watch on VR headsets for an immersive experience of different professional, demanding situations requiring advanced soft skills.

The full VR simulation consisted of a short brief, a 360° movie, and a debrief in groups of 5–8 students. The debrief was led by a facilitator and highlighted students' reactions to the 360° movie, their considerations of the actions of the professional and the client/patient and their evaluations of their own future learning needs.

The aim of this study is to explore student's experiences with VR simulation and how this learning design can stimulate their professional development.

Methods

The empirical data consisted of six focus group interviews with 28 bachelor's students (nursing, social work, social education and occupational therapy) who participated in VR simulation. We used a qualitative design, and the transcribed interviews were analysed using thematic analysis.

Results & Discussion

According to the students, VR simulation was conducive to their professional development. They underscored that the immersive 360° movie, followed by team-based debriefing, facilitated emotions for learning. They experienced VR simulation as "alive and real" and a distinctive learning experience compared to case studies and textbooks. Furthermore, it was experienced as a safe opportunity to explore different perspectives on complex and challenging situations. Notably, the students added the perspectives and observations of other students to their own. They

considered this unique; according to how they differently from clinical placement all had experienced the same situation. Hence, VR simulation was experienced as a valuable didactic tool to prepare students to deal professionally with vulnerable patients or clients.

Keywords

Innovative pedagogy, virtual reality simulation, communication, soft skills, interprofessional, nursing students, social work students, social education students, occupational therapy students

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SOCIETY FOR
SIMULATION IN EUROPE

Substance abuse medicine, simulation, expert by experience, pilot

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

University of Helsinki Faculty of Medicine simulation centre started an expert by experience seminar pilot in the autumn of 2021. An expert by experience is a person with own experience of life crisis, e.g. mental health and substance abuse challenges. The person has been educated by City of Helsinki Vocational College or non-profit organisations to works as an expert by experience on various tasks, including giving live experience lecturers for nursing and medical student etc.

The goal of the expert by experience pilot was to offer medical students low-threshold training opportunity to help them assess and challenge their attitudes and creating an understanding of challenges which people meet during their life.

The connection between suicide attempts and substance abuse disorders is strong. In Finland, almost half of those who commit suicide have had harmful alcohol use or alcohol addiction. At the population level, about 5% of suicides are related to drug use.

The Suicide Prevention Program for 2020–2030 in Finland aims to consolidate care approaches that follow the Current Care Guidelines for preventing suicides and treating people who have attempted suicides. It aims to strengthen collaboration between experts with experience and healthcare agencies.

Methods

Several voluntary expert by experience seminars were organised between September 2021 and November 2021 with a researcher of the subject and an expert by experience speaker as a guest. The seminars included presentation on the subject of abuse medicine or mental illness and a discussion session where expert by experience shared life experiences with students.

Results & Discussion

95 students from all six study years participated in the seminars.

Feedback was collected with a voluntary electronic form. Between 2021 and November 2022, 95 students across all study years gave feedback. Students rated (Likert scale) the experience highly: 4,80.

Overall, the respondents found the seminar to be useful and insightful.

Medical students should have the opportunity to practice interacting with an intoxicated and suicidal patient in a clinical laboratory situation with the guidance of experienced healthcare workers and expert by experience persons. The expert by experience seminars has proven to be successful and meaningful and will continue.

Keywords

Simulation, substance abuse medicine, suicide prevention, interaction, expert by experience, pilot

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SOCIETY FOR SIMULATION IN EUROPE

Tavi

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

Interventional Cardiology (IC) requires a substantial technical skill. Most IC procedures are high risk and often performed in life-threatening situations. Learning by new practitioners (and of new procedures) is today occurs on the patients using a “see some – do many” training model. This approach has a steep learning curve with inefficiencies and risks of safety events. Furthermore, some structural heart disease procedures are performed so infrequently that learning while doing is infeasible or unsafe. Simulation-based training is an effective alternative that allows learning of new IC procedures to occur in an environment that is not time-pressured and does not put the patient at risk (REF). Performance can be measured and competence established prior to patient exposure. The virtual IC simulators currently available are largely software based and provide limited haptic feedback. An increasingly common IC procedure is transaortic valve insertion (TAVI), a procedure that requires manual skills not supported by existing simulators. We therefore designed, developed and validated a TAVI simulator for hyper-realistic IC training.

Methods

The TAVI simulator was developed over 7 months at Hospital Virtual Valdecilla (HVV, Santander, ES). A multidisciplinary team of ICs, engineers, and simulationists used a Design Thinking approach. The first phase (‘empathy’) allowed us to understand the problem and goals from the viewpoint of IC trainees. During the Definition phase, the team shadowed and interviewed ICs to define procedural steps and objectives. User needs and design requirements drove the next phase – iterative design, prototyping, and testing. The simulator consists of five design elements: cardiovascular system, pumping system, model chassis, femoral access system, and overall housing. Computer aided design (CAD) facilitated iterative 3D printing and injection molding of parts as well as development of the electronics. Use testing was performed by ICs in the HVV simulation labs doing the TAVI procedure in clinical scenarios.

Results & Discussion

It took 10 design-build-test cycles to achieve a functional model (Figure 1) suitable for validation testing. Two workshops were then held before starting the definitive training programs. This project’s success demonstrates the value of a Design Thinking approach including a multidisciplinary team, human-centered design, and continual involvement of end-users. The next phase of the project is to develop a curriculum and conduct a study to evaluate learning and

performance of ICs using the new TAVI simulator. A simulation center that incorporates both engineers and educators can customize its tools and processes to better meet the needs of users.

Keywords

Simulation, Innovation, Cardiology, Education, Interventional Cardiology, Design, Heart, Training.

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SOCIETY FOR
SIMULATION IN EUROPE

Telesimulation as a way to accommodate clinical medical students in regions of geopolitical conflict

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

Authors

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Introduction: Background, Context and Aims

The impact of crisis situations on education is always disruptive, but in the past this led to the inevitable pausation of educational activities. Only by transitioning into a largely virtual setting over the past few years has the potential benefits of such applications for future crises become visible. Their use has seen extension beyond the necessity created by the COVID-19 pandemic, and even complex psychomotor skills for clinical education have been executed digitally through adequate telesimulation techniques. It is important to retain this method as a backup plan in order to ensure continuous access to education during all types of crises. We describe here the potential of using similar online applications of simulation based teaching in areas of geopolitical conflict as a way to bridge the educational gap that such devastating circumstances can create.

Methods

Clinical teaching is an important part of medical school. It usually takes place in the second half of medical school, though more and more students are being exposed to clinical modules and teaching sessions early on. Often, this will consist of patient encounters, bedside teaching at the hospital, and real-life simulation using anatomical models or other devices for the practice of clinical skills. Simulation is a method that can be easily translated into an online setting, as many applications thereof are already digital, but even non-digital simulation can be converted to an extent. The most feasible simulation techniques for online settings are virtual patient encounters played by teachers or actors, online case based learning tools, and artificial reality (AR) or virtual reality (VR) applications for simulation of clinical scenarios.

Results & Discussion

Geopolitical conflict is omnipresent on the globe and creates destruction in many ways. The interruption or total termination of one's education is only one of the means in which a crisis can alter a person's life. Ensuring the possibility of continuation of medical studies is paramount both to the individual and a country's health workforce. While many skills and scenarios can be practiced in a virtual simulation setting, some parts of medicine must be learned during clinical rotations in hospitals and in direct contact with patient care. However, certain countries' largely theory-based medical curricula, which postpone patient contact until postgraduate education, underline the feasibility of this strategy. This emphasizes the importance of enabling seamless medical education in regions struck by crisis by using telesimulation as a compromise to clinical teaching.

Keywords

conflict, access, simulation, education, undergraduate education, telesimulation, digital education, online education

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Telesimulation during the COVID-19 pandemic: Experiences on soft skills acquisition in undergraduate medical education.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Background: The challenges generated by the SARS-CoV-2 coronavirus pandemic to the face-to-face educational model of the Centro Universitario del Sur of the University of Guadalajara, oriented the efforts of different disciplines towards virtuality. Although virtual learning spaces existed at the institution prior to the pandemic, there was a lack of sufficient experience. The adaptation of information and communication technologies with role-playing facilitates the development of clinical telesimulation scenarios for the integral training of undergraduate students in situations where face-to-face attendance is restricted.

Methods

Methodology: Quali-quantitative, observational, descriptive, cross-sectional study with the use of two capture tools to evaluate the perception of quality and effectiveness in the use of 10 telesimulation cases applied with videoconferencing platforms to 48 regular and guest students of the Advanced and Neonatal CPR course of the Bachelor's Degree in Medical Surgeon and Midwife of the Centro Universitario del Sur of the University of Guadalajara from August 10 to September 17, 2021.

Objectives: To demonstrate the benefit of the digital video library as an adjuvant to teaching with the use of role-playing in clinical telesimulation scenarios for the acquisition of soft skills (leadership, teamwork, communication skills) and non-soft skills (cognitive) in the approach and care of simulated patients through the use of an on-line narrative.

Results & Discussion

Results: A video library was generated with 25 vital signs monitors based on stages of initial presentation, deterioration and improvement. 75% of the students evaluated the quality of the activities as "very good" for undergraduate teaching, 11% "good", 4% "regular", 6% "bad" and 4% "very bad".

Conclusions: The adaptive process is a formative stage of character and ingenuity, the pandemic forced the adaptation (face-to-face to virtual) of traditional learning techniques. Telesimulation was an accessible and useful technique for the integration of knowledge, improvement of soft skills, evaluative in the development of the student in the cognitive, emotional and behavioral spheres. Telesimulation and role-playing proved to be techniques capable of improving and/or permeating areas of the educational system, facilitating the achievement of metacognition by the student, regardless of distances or physical space.

Keywords

Key words: Emergency Medicine. Telecommunications, Role playing, Simulation training.

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Testing of app-assisted triage during Mass Casualty Incident simulations

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Mass Casualty Incidents (MCI) occur when local emergency services are unable to cope with the volume of treatment necessary [1,2]. A recurring problem with MCI is an inadequate flow of information [3, 4, 5]. One way to channel information faster and more efficiently is to provide technical support. An Android app was developed and tested that allows triagers to enter patients into a database with minimal information (patient number, triage and, if necessary, a note), which can then be accessed as necessary, for example, by the leading emergency physician, even before arrival and without radio communication. In the best case, this results in a directly accessible overview of the situation and more rapid flow of information.

The purpose of this study was to gain initial insights into the operational function of the app.

The following questions were investigated:

What positive or negative impact does digital support have on the exercise?

Which requirements does an app have to meet to ensure acceptance?

Methods

In the context of a two-day MCI exercise, a total of 38 medical students participated in this test. The first day was conducted with 19 students as a control group without an app. Both days were divided into three exercises: Two preliminary exercises with 9-10 students and 15 simulation patients each, and the main exercise with 19 students and 40 simulation patients. Both days began by introducing MCI procedures. Dynamic Patient Simulation [6] was employed in all exercises. The students predominantly had had no previous contact with MCI exercises.

During the exercises, anomalies were noted, and times were measured. After each exercise, the leading emergency physician was interviewed to verify the completeness of their view of the situation. The Dynamic Patient Simulation allows an overview of the status changes of the simulation patients. The app additionally records the times of the inputs and the progress of the patients.

Results & Discussion

There was a decrease in the proportion of patients entered into the app between the two pre-exercises (with 13 and 12 of 15 patients registered, respectively) compared to the main exercise (23 of 40 patients registered).

It is necessary to investigate which factors might change during the main exercise and thus have a negative effect on

use. These include several deliberately stress-inducing factors, e.g. played back noises. Further testing and refinement of the app should provide clarity on these issues and verify the potential of the application over a purely paper- and radio-based approach, which tend to be error-prone [7,8,9]. In the case of exercises, this would primarily be a question of increasing the volume of analyzable data. In real operations the acceleration of patient processing thanks to faster communication.

Keywords

mci, app, software, mobile, triage

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

The Ambulance course

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

The role of a paramedic involves them working in a wide range of environments and patient populations. As first responders, paramedics must make key decisions about patient care. Research has demonstrated that there is a high demand for mental health training amongst emergency services staff [1]. However, demands on resources mean that personnel can't always be released to attend training.

Methods

This was a 5-day train the trainer programme delivered online to East Midlands Ambulance service. The aim of this training package was to train mental health leads for the ambulance service, who will then provide mental health training to their colleagues on the scene, by facilitating debriefs on their interventions. Day 1 of the course was an interactive masterclass on raising mental health awareness in crisis services. Day 2 of the course was a simulation day with a series of five simulated scenarios using trained actors, covering typical mental health scenarios that a paramedic may encounter (deliberate self-harm, paranoid schizophrenia on clozapine, postnatal anxiety and pulmonary embolism, attempted hanging, and hypomania). Two specific debriefing models were identified as relevant to the scope of debrief practice in the crisis service. These were the modified TALK debrief model and the modified Pendleton's model. These were demonstrated to participants during their simulation day and then taught in detail along with other essential debrief skills on day 3 of the course. On day 4, participants practiced leading debriefs on a series of simulated mental health scenarios. On day 5 of the course, the role of debrief was explored along with potential challenges and solutions. The course was concluded with a focus on participants' own mental health and wellbeing and how to support their colleagues.

Results & Discussion

12 participants were trained as mental health leads for their local ambulance service. Participants were asked to complete a pre-course and post-course questionnaire measuring their confidence in the learning objectives, self-efficacy, and wellbeing. Participants showed an increase of 4.16 (6.9%) in the course-specific questions and of 3.81

(5.5%) in the Warwick Edinburgh Mental Wellbeing Scale. Additionally, a t-test found a statistically significant improvement in the Human Factors Skills for Healthcare Instrument between the pre-course (M = 102.4, SD = 0.45) and post-course scores (M = 108, SD = 0.88), $t(14) = 2.68$, $p = .02$.

This demonstrates that the course was effective in enhancing both knowledge and skills in, as well as trained the participants in becoming confident debriefers.

Keywords

Mental health

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

The Coroner's Court course

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

Authors

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Introduction: Background, Context and Aims

One of the most challenging aspects of working in healthcare is experiencing a death of a patient who has been under your care. Often, the death is referred to the coroner to hold an inquest. This is an investigation into the cause of death and, in some circumstances considers what action can be taken to prevent future deaths. Being involved in a coroner's inquest is a very real and anxiety-provoking prospect for many clinicians, yet there is no formal training provided for this.

Methods

This one-day interactive online course aimed to cover everything a clinician needs to know about the coroner's court, including the impact on families, and relevant skills for the preparation and writing of reports and giving oral evidence. The course was piloted for psychiatry specialist registrars working in South London and Maudsley NHS Foundation trust. The course was led by a practicing Coroner, an experienced mental health lawyer, and a consultant psychiatrist, with invaluable contributions from families who have lost loved ones in mental health and custodial settings, and their legal representative.

The morning sessions focused on learning about the inquest process and the roles of different individuals involved. The afternoon sessions were interactive, including a report writing workshop and simulations of common coroner's court scenarios. The example scenarios were a coroner taking a participant through a report, being questioned by a non-hostile Trust representative versus being questioned by a family representative. The modified Pendleton's model was used for debriefing with feedback from all expert facilitators. Throughout the course, the emotional impact of inquests on clinicians and families and relevant support resources were considered.

Results & Discussion

The course was attended by 20 psychiatry registrars, aged from 30 to 55 years. Participants were asked to complete a pre-course and post-course questionnaire. The findings showed a significant increase in their understanding and confidence relating to different aspects and skills of the coroner's inquest between the pre-course ($M = 2.88$, $SD = 0.45$) and post-course scores ($M = 3.84$, $SD = 0.88$), $t(13) = 3.12$, $p = .008$. The majority of participants identified the simulation component as the most helpful components of the course.

Overall, the findings demonstrate the effectiveness of this course for supporting clinician's understanding and confidence in undergoing a coroner's court inquest. Simulation provides a valuable tool to prepare clinicians for this challenging aspect of their role through providing an environment for psychologically safe practice and development.

Keywords

mental health

References/Acknowledgements (Vancouver Citation style)

Acknowledgements:

Many thanks to Jacqueline Devonish (Coroner), Nigel Parsley (Coroner), Toby de Mellow (Trust's solicitor), Raju Bhat (Families' solicitor) and families for all their help in putting this course together.



SOCIETY FOR
SIMULATION IN EUROPE

The Effect of Communities of Standardized Patient Model on Identity Development of Standardized Patients: A qualitative study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

The communities of practice are social networks formed by individuals who focus on a practice or collaboration, sharing and developing a common knowledge base, belief and value system, history and experience. Learning takes place through the roles, responsibilities and practices taken in the community.

With more interaction with students the SPs' identity formation improves.

The self-directed learning (SDL) is the process which individuals take responsibility for their own learning by determining their learning needs, learning objectives and strategies to achieve them, implementation and evaluation of these strategies with or without the help of others.

The aim of the study is to improve SPs' identity formation by implementing an intervention based on communities of practice and self-directed learning skills.

The research questions:

-What is the effect of communities of practice model in identity formation of SPs?

-What is the role of SDL skills in development of SPs' identity formation?

Methods

Qualitative study.

An 8-month intervention named "Communities of SPs Model Program" can be seen in table 1.

Semi structured interviews, observations and reflective diaries are planned to be used for data collection.

Semi structured interviews: Individual interviews planned as pre and post interviews with same semi-structured questions. The examples of the questions are: What does being a standardized patient mean to you? How do you describe yourself as a standardized patient? etc.

The SPs will be observed by the two authors focused on SPs' identity formation and relations between each other as a member of SP community.

Reflective diaries will be written by SPs' on their experiences through intervention and the interactions with students.

Participants: Participants are the 10 SPs in KTU, Faculty of Medicine, SP unit.

Results & Discussion

The pre-interview results of an ongoing project are listed below:

The participants were all nurses and technicians. So the results have an perspective of being both health profession and SP.

The themas and results of pre-interviews:

The main motivation of being SP is to opportunity to contirbute to students learning.

Being a health profession background SP has both advantages and disadvantages. The main advantage is to have knowledge and experience with variety of patients. The main disadvantage is to use health terminology unconsinously during simulation.

The main emotion is happiness.

The main difference after being SP is to understand pyshicians as a human being. Although the SPs are health professions, they still have an enlightenment about pyshicians capabilities and limitations as a human.

Keywords

standardized patients, identity formation, communities of practice

References/Acknowledgements (Vancouver Citation style)

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Acknowledgements: This is the pre-interview results of an ongoing project. The project will be and by May 2023 and all the results can be share at SESAM 2023 meeting.

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SOCIETY FOR
SIMULATION IN EUROPE

The Kollegial Feedback Program of the "Netzwerk Kindersimulation e.V."

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

Founded in 2015, the "Netzwerk Kindersimulation e.V." is an information and networking platform for pediatric simulation in German-speaking countries. From beginners to specialists, we work and advocate for simulation in the pediatric field. One of our important fields of work are quality principles and standards for high quality pediatric simulation training. This includes both the theoretical foundations and prerequisites as well as the practical implementation of these. International studies and publications as well as many years of experience in the field of pediatric simulation form the basis for our recommendations, which are constantly adapted to the current state of knowledge. In doing so, we try to filter new findings and pass them on to the members of our network in practical recommendations. A particularly important area for us is faculty development and improving the quality of simulation instructors and facilitators.

Methods

Therefore, we have developed a "Collegial Feedback" program for the members of our platform to encourage them to take advantage of the resources that a simulation platform can offer to its members. In particular, (1) to learn about different simulation environments (2) to get qualified feedback on an equal footing and (3) to use this exchange program for their personal growth and networking in the field of simulation. The program is based on a reciprocal visit followed by a collegial feedback session. The program is intentionally not designed as a mentor-mentee program, but is based on the concept of collegial or peer feedback from the field of education. With this program, we also wanted to give more visibility and recognition to continuing education in simulation. We developed a questionnaire for interested members, created frameworks for the program, and produced informational materials on faculty development and debriefing assessment. To make the program more accessible, we created a scholarship for a select group of participants.

Results & Discussion

Due to Corona, we were only able to start our program at very short notice this year. But fortunately, we were able to launch it with the first group of participants. After the program deadline, the participants were selected and invited to an online kick-off meeting. Now they have until the end of the year to visit each other and give us feedback on the program and their visits. With the experience and adjustments from the first phase of the first round, we have now already launched the call for applications for a second round, which will end in March 2023.

Keywords

Faculty Development; Collegial Feedback; Peer Feedback Debriefing assessment; Quality in Simulation

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

The Maternity Team - a pit-crew approach to all maternity emergencies.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Pit-crew or horizontal approaches to assessment and resuscitation in clinical emergencies are built on a shared understanding of the roles and responsibilities of team members, coupled with algorithmic assessment and management protocols followed by all team members. Trauma teams provide an excellent example of pit-crew teams, with team members simultaneously executing tasks within their defined roles, in line with the universally understood Advanced Trauma Life Support (ATLS) algorithm. Implementation of the “trauma team” approach has been associated with improvements in patient care and outcomes. Maternity settings experience similar time-critical high stakes emergencies to other emergency settings, but often lack a team structure. Apart from some emergency specific algorithms (eg HELPERR for shoulder dystocia) or adaptations of ATLS, there has been no specific delineation of roles with clearly defined assessment and management tasks which applied to all maternity emergencies. Here we outline the approach of the “maternity team” developed and implemented in a maternity hospital delivering more than 10 000 babies annually.

Methods

The maternity team adopts a similar approach to that used in trauma teams, emphasizing role allocation early during team formation to optimize team performance. Although maternity emergencies rarely have a pre-briefing, teams are trained to briefly pause to ensure role allocation as the team gathers by the bedside. Seven roles are defined, each with specific assessment and management tasks. These roles include 1) team leader, 2) scribe 3) airway, 4) circulation 5) drugs, 6) abdomen 7) pelvis. While each role may be performed by one individual, teams are trained to consider in which emergencies and team contexts it may be appropriate for team members to take on two roles, or for two members to be allocated to one role. The roles also form the basis for moments of team in-action reflexivity, with team member providing a role-specific update during periodic team “re-caps” performed in a systematic manner. Training clinicians in implementing the “maternity team” includes table-top games, rapid cycle deliberate practice and immersive simulation. Clinician feedback has been overwhelmingly positive.

Results & Discussion

This systematic approach to team formation in maternity emergencies is founded in teamwork science and can be implemented in units of any size. Challenges remain in respect to ad hoc nature of maternity teams. Ongoing refinement of the model and broader implementation is expected to produce benefits similar to those seen in other settings that have adopted a pit-crew approach.

Keywords

Maternity, Obstetrics, Teamwork, Emergency team

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SOCIETY FOR
SIMULATION IN EUROPE

The Summative or formative assessment. Application of selected methods for evaluation in simulation in healthcare

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

The simulation in healthcare as an educational method supports the evaluation of students' practical skills, communication in a group skills or working under time pressure. This assessment, defined as formative assessment can be related to observing learning outcomes, development of clinical competences and feedback. On the other hand, the assessment concerning the summary of a certain stage of learning is defined as summative assessment. The teachers who have simulation exercise should be trained to use the assessment based on simulation, since they know how to use it, they will do it in a reliable manner. However, it must be taken into consideration that formative assessment evaluation is a process, in contrary to summative assess, which is treated as a final product.

Methods

The authors presented selected methods of evaluation of learning outcomes based on the medical simulation method. The differences in application of summative and formative assessment, based on the non-systematic review of the specialist literature for the period of 2012-2022, were presented.

Results & Discussion

According to Healthcare Simulation of the Standards of Best Practice the most important thing of summative and formative assess is to respect clearly established criteria. The facilitator's ability to use the appropriate type of assessment will ensure the credibility and transparency of the simulation-based assessment formulation activities undertaken. In case of the formative assessment, it is crucial to communicate the feedback in the right way, since it will create the moment for students' reflection to identify knowledge deficits. Moreover, teachers can modify following activities, according to students' needs. Examples of the formative assessment are short quizzes, verification tests, and also debriefing after the high-fidelity simulation activities. On the contrary, the summative assessment, used to

evaluation of the learning outcomes, after the finish of the course or the term allows in the simulation environment check students' behavior in clinical case, their skills, and attitudes. One of the most popular forms of the summative assessment are Objective Structured Clinical Examination (OSCE), as well as Multiple Choice Questions tests (MCQ) considering single or multiple choice, or oral tests.

Summarizing, assessment based on simulation gives various possibilities. It is possible to objectively assess the students' knowledge, technical skills, interpersonal communication, as well as professional attitudes. Formative assessments can be used to formulate a summative assessment, which will guarantee the student a better performance and reduce the stress level during the final exam.

Keywords

summative assessment, formative assessment, simulation, nursing, education

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SOCIETY FOR
SIMULATION IN EUROPE

The VAST Wellbeing Course for reducing burnout and improving wellbeing amongst healthcare providers working in resource-limited settings: a mixed methods study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

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Introduction: Background, Context and Aims

Burnout, depression, and anxiety are common amongst healthcare providers (HCPs) (1-4). Burnout in HCPs negatively impacts health systems through risk of medical errors, substandard patient care, early retirements, and unexpected resignations (3, 5-7). In low-resource settings, risks for burnout are exacerbated by excessive workloads, high burden of disease, and resource shortages (8).

Our team has developed the Vital Anaesthesia Simulation Training (VAST) Course, a 3-day program that uses high-quality, low-cost simulation to teach core clinical practices and non-technical skills to perioperative teams in low-resource settings (9, 10). The course includes a one-hour simulation session focused on physician burnout. Course participants consistently requested a deeper exploration of burnout and its prevention.

Methods

Based on this request, the one-day VAST Wellbeing (VW) was designed to help HCP working in low-resource to recognize and prevent burnout and to develop strategies for personal and workplace wellbeing. VW uses active learning techniques including mindfulness exercises, interactive presentations, small group tasks, videos, and change planning. In September 2022, VW was conducted twice in Rwanda.

VW is being assessed by a prospective mixed-methods cohort study. Quantitative methods include participants' reactions to the course content and pre- and post-course surveys using validated mental health measures. Qualitative methods are in-depth semi-structured interviews to explore implementation of wellbeing strategies and burnout prevention several months post-course.

Results & Discussion

Sixty HCPs working in resource-limited settings attended VW over 2 days, with 28 participating in the study from 11 countries. In the immediate post-course survey, participants rated the course overall as 61% "very good" and 29% "excellent". Rating their likelihood of recommending the course on a scale of 1 to 10, the average was 8.7 (SD 1.7). Participants found the course well organized (82% "very organized" and 18% "extremely organized"). In response to free text questions, participants liked the topic, content, focus on low-resource settings, and interactive teaching methods.

Conversely, the participants commented that the time was too short, and the group was too large; however, most noted nothing to improve. Results comparing pre- and post-course mental health measures will be analyzed in the next month. In-depth interviews will be completed by early 2023; results will be available for presentation.

Burnout is a serious problem for HCP, with those in low-resource settings having additional risk. VW was designed to reduce burnout and improve personal and professional wellbeing in this context. VW has a possible role in addressing this important area of need.

Keywords

Wellbeing; Wellness; Burnout; LMIC; Low-resource

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The assessment of participants and trainers on simulation based peer-assisted learning

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

Peer-assisted learning is defined as people with similar backgrounds helping each other learn by teaching and being taught. Combining this technique with simulation learning, an increasingly popular technique in the medical teaching process, we get an innovative educational strategy that allows the participants to gain confidence in conducting clinical maneuvers in a controlled and informal environment.

Our study aimed to evaluate the acceptance of medical students of simulation based peer-assisted learning concerning the simulation workshop they participated in and the impact of this technique on student-trainers.

Methods

This cross-sectional study was conducted at the Department of Medical Simulation of the Center for Innovation and e-Health (CleH), part of the University of Medicine and Pharmacy "Carol Davila" Bucharest, Romania. Our workshop is aimed at first year students and is conducted by students in all years of study that previously underwent extensive training and evaluation.

Participants and trainers were invited to complete a Likert scale questionnaire regarding the impact that peer-assisted medical simulation learning (PA-MSL) had on them.

Results & Discussion

The questionnaire was completed by 63 participants and 55 trainers. Almost 80% of the participants agreed that peer-assisted learning is a useful teaching technique, an idea supported by 94.55% of trainers. Both participants and trainers believe that the low age difference between them has a positive impact on the educational process, creating a more comfortable environment that allows better knowledge acquisition and increases confidence. The majority of participants evaluated the assisting-peers as well trained and good at answering their questions but 50% considered that the training would have been more efficient if it had been held by a specialist. This lack of trust has also been observed

by more than 50% of trainers.

The majority of assisting-peers (76%) have been participants in the past and over 90% of them were influenced by this into becoming trainers. Additionally, the volunteers found that by assisting their peers they were able to develop skills like: critical thinking, decision making skills and teamwork. Furthermore, 38% of trainers admitted that their activity in the simulation department made them take into consideration an academic career.

This study was able to gain some insight into the experiences of participants and student teachers with PA-MSL. Both groups found advantages in taking part in peer-assisted simulation workshops, both on an academic, as well as on a psychological level.

Keywords

Medical simulation; peer-assisted learning

References/Acknowledgements (Vancouver Citation style)

The authors are very thankful to all the associated personnel that contributed to this research.



SOCIETY FOR
SIMULATION IN EUROPE

The constructivist template method: Uses in simulation-based research

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

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Introduction: Background, Context and Aims

Constructivist methods are new to many healthcare professionals conducting simulation-based research (SBR). Thematic analyses are common constructivist data analysis methods. In SBR, thematic analyses are divided into four categories: (1) template analysis, (2) framework analysis, (3) thematic analysis (4) and qualitative content analysis. (5) Some of these methods recommend inductive analysis (in which codes are derived from the data), which is only appropriate when there is an absence of pre-existing literature. Others recommend deductive analysis (whereby pre-existing codes are applied), but fail to detail the underpinning philosophical assumptions. In order to produce high-quality research, novice researchers require clear, explicit methods with robust theoretical underpinnings. We argue in favour of an emerging method of thematic analysis that we believe is best suited to contemporary SBR: the constructivist template method.

Methods

Through conducting SBR over the last 12 years, including completion of our doctoral degrees, we have developed the constructivist template method. Our experience of conducting research using constructivist grounded theory, (6,7) framework analysis (8) and template analysis (9) informed its development. Our reflections and discussions in the process of completing these studies resulted in the creation of the new method. The constructivist template method has informed the data collection and analysis of several recent projects. (10–13) It incorporates the problem/gap/hook heuristic, (14) use of conceptual frameworks, (15) purposive sampling and saturation of the themes from constructivist grounded theory, (16) deductive coding as in template analysis, and emphasises the generation of actionable outcomes as in framework analysis. It includes explicit methods of modifying the coding template to better fit the data. The stages of the constructivist template method are shown in the figure.

Results & Discussion

Arguments in favour of using the constructivist template method for SBR include the fact that it helps build on existing theory, rather than looking at the data in isolation. It incorporates the foundations of constructivism, as described by Charmaz. (16) It is well suited for SBR, because it helps to move the researcher from abstract conceptualism to practical uses of the theories that are built. Limitations of this method are similar to other constructivist research methods, in that the results are not usually generalisable, but may be transferable to other contexts. (16) The constructivist template method may appeal to simulation-based researchers who are new to constructivism, as it contains a clear step-wise approach, justification for data collection and analysis methods, and helps guide researchers towards actionable outcomes.

Keywords

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SOCIETY FOR
SIMULATION IN EUROPE

The development and content validity of PhaBS: A marker system for Pharmacists' Behavioural Skills

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

The behavioural skills (also known as non-technical skills) required of pharmacists have changed significantly in recent years, towards "a greater patient-centred role"(1) which "demands enhanced clinical skills."(1) At the end of their first postgraduate year, trainee pharmacists are expected to independently prescribe,(2) a task which requires a complex array of behavioural skills.(3) Behavioural marker systems (BMS) for acute care simulations are prevalent in other specialties, but not yet for pharmacy. A BMS could help to identify behavioural skill strengths and weaknesses in pharmacists, to better focus future training interventions. We aimed to develop a BMS for pharmacists in acute care simulations and to develop the content validity of tool.

Methods

Following ethical approval, we gathered information on existing BMS, and reviewed the available literature on pharmacists' behavioural skills. We obtained consent for use of videos showing pharmacists and trainee pharmacists in acute care simulations. We then collated three panels of experts from different regions of Scotland. The first panel met in person, reviewed the evidence, watched the videos and prepared a prototype BMS. The second panel met in person, refined the prototype and discussed its potential uses and limitations. The third panel did not meet, but individually assessed the content of the marker system as either essential, useful but not essential, or not useful. Responses were used to calculate the Item-Content Validity Index (I-CVI) score (4) for each of the domains, and the Scale-Content Validity Index (S-CVI) (4) for the BMS.

Results & Discussion

Panel one included eight experts, panel two included four experts and panel three included 10 experts. The marking scheme produced by the first two panels was named Pharmacists' Behavioural Skills (PhaBS). It followed a traditional hierarchical structure including categories, elements and behaviours. Categories included situation awareness, decision-making and prioritisation, collaborative working and self-awareness. The I-CVI scores for each of the individual elements are shown in the table. The S-CVI score was 0.95 (ideal). The panels could not agree on whether PhaBS should be a formative or summative assessment tool. Research suggests that summative assessment does not drive deep learning, and may actually inhibit learning.(5,6) Psychological safety in simulation can be threatened by summative

assessment.(7) Conversely, formative assessment has been shown to improve learners' self-regulation strategies and academic well-being.(8) We therefore argue strongly in favour of adopting PhaBS as a formative assessment tool for assessing pharmacists' behavioural skills in acute care simulations.

Keywords

Pharmacy, behavioural skills, immersive simulation, assessment

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

The effect of deception in simulation-based education in healthcare: a systematic review and a meta-analysis

Format: Research Studies - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

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Introduction: Background, Context and Aims

Simulation in healthcare education enables learners to practice in a realistic and controlled environment without putting real patients at risk. Deception can be incorporated to generate a realistic learning experience. We aim to perform a systematic review of the literature to study the effect of deception in SBE in healthcare.

Methods

Online database search was performed from conception up to the date of search (July 2022). Qualitative descriptive analysis included all published and unpublished works as for the quantitative analysis, only randomized clinical trials with an objective measurement tool relating to learner's performance were included. Forward citation tracking using SCOPUS to identify further eligible studies or reports was also applied.

Results & Discussion

Twelve out of 8.889 articles met the predefined inclusion criteria. Two randomized controlled trials were identified using deception for the intervention group and ten articles provided current knowledge about the use of deception in simulation-based education in healthcare. The aspects discussed in the latter articles related to the possible forms of deception, its benefits and risks, why and how to use deception appropriately, and the ethics related to deception. At the end of this meta-analysis, we conclude that using deception in SBE in healthcare by challenging authority negatively affects the trainees' performance on the mAIS scale. This approach and other forms of deception in SBE, when used appropriately and with good intent, are generally accepted as a valuable approach to challenge learners and increase the level realism of SBE situations. Further randomized trials are needed to examine and confirm the effect of other deceptive methods and the true psychological effect of those interventions on validated scales

Keywords

Clinical specialty "NA", "Deception", "Simulation", "Disbelief", "Fidelity" "Information modification" "Debriefing"

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Acknowledgment:

we thank Mrs. Farha Aida our librarian for her help with the literature research strategy.

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SOCIETY FOR
SIMULATION IN EUROPE

The effects of 'The Camp of Implementation and Assessment of The Basic Medical Practices' on clinical years students; a medical school experience during the pandemic

Format: Research Studies - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

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Introduction: Background, Context and Aims

During the Covid-19 epidemic, one of these difficulties in medical education is the inability to carry out the training and assessment of clinical practices. Basic Medicine Practices (BMP) in medical education were defined as 'competencies that must be acquired before graduation in order to be a good physicians' by National Committee of Core Curriculum for Undergraduate Medical Education in Turkey. This study was aimed to evaluate the effects of 'The Camp of Implementation and Assessment of The Basic Medical Practices' (TEHUD) on clinical skills and clinical performance of the clinical year students.

Methods

This is a mixed designed study includes cross-sectional method (pretest-posttest design) and qualitative interviews. It was carried out between September 2021 and February 2022 in Karadeniz Technical University Faculty of Medicine. The population of the study consists of a total of 450 students from 5th (n=262) and interns (n=188) who attended the TEHUD camp previous year. It was aimed to evaluate at least 30 students from each year according to the central-limit theorem by using convenience sampling method. Procedural and non-procedural skills were evaluated by using task trainers, high-fidelity simulator and standardized patients. A Mini Clinical Examination was held on taking informed consent for interns by using standardised patients (SPs). In addition, 3 topics of BMS have been evaluated by using Direct Observation of Procedural Skills method. Besides, focus group interviews were held with 8-10 5th and 6th year students.

Results & Discussion

Researchers assessed 30 fifth year students and 30 sixth year students. In order to reveal the effectiveness of the trainings given, the difference between the first and second assessments for the relevant skills were analyzed with the t-test and the Wilcoxon signed-rank test. While t-test was applied in the analysis of data on Inhaler Treatment, Blood Pressure Measurement and Taking Informed Consent skills where the assumption of normal distribution was provided (Table 1), Wilcoxon signed-row test was applied to the data obtained for Heel Blood Test, Urine Catheterisation, Suturing, Nasogastric Catheterisation, Wound-Burn Care where the assumption of normal distribution could not be met (Table 2).

Focus group interviews were held with 8-10 people for 5th and 6th year students. The main categories were revealed as: opportunities for practices on basic medical skills, observations on the workplace climate and dynamics, educational opportunities that support learning, problems experienced in educational design-methods and evaluation processes, psycho-social effects of pandemic on camp.

Keywords

assessment, undergraduate medical education, simulation, workplace-based assessment, COVID-19 pandemic

References/Acknowledgements (Vancouver Citation style)

Acknowledgements: Researchers thank to Gokhan Kumlu for his supports on analysis of quantitative data.

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SOCIETY FOR
SIMULATION IN EUROPE

The impact of debrief models on self-efficacy within mental health simulation training: a quantitative analysis

Format: Research Studies - Oral Presentations and Short Communications

Topic: Debriefing

Authors

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Introduction: Background, Context and Aims

Simulation-based education has been evidenced as an effective form of pedagogy in mental health and care settings, through consistent improvements in self-efficacy and technical and non-technical skills (Kunst, Mitchell & Johnston, 2017; Piette et al, 2018). A key component of simulation-based education is post-simulation debriefing (Shinnick et al, 2011; Issenburg et al, 2005). Debriefing involves educators turning into facilitators and guiding participants through reflective discussions, however there is no single debrief model used across mental health simulation training. Various different debrief models have been evaluated within the literature previously, but models have not been directly compared within mental health simulation. Taking a novel approach, this paper investigated whether there is a significant difference between self-efficacy scores of participants debriefed using two debrief models, the Diamond model and a modified Pendleton's, during simulation-based education.

Methods

Participants consisted of 751 healthcare professionals who participated in 21 different Simulation training courses held between September 2017 and August 2019. They completed pre- and post-course questionnaires using the Human Factors Skills for Healthcare Instrument. Pre- and post-data were screened using Mahalanobis Distance and Levene's test and data were analysed using paired samples t-tests.

Results & Discussion

For the Diamond Debrief model, analysis found significant differences in the pre-course human factors scores ($M = 96.83$, $SD = 12.19$) and post- course scores ($M = 101.08$, $SD = 14.70$), $t(545) = 7.33$, $p < .001$ with a small-medium effect size of $d = .31$. The Pendleton's model showed no significant improvements in the pre-course scores ($M = 92.03$,

SD = 12.28) and post-course scores (M = 91.16, SD = 14.82), $t(204) = 0.85$, $p = .399$. As such, results suggested a benefit to using the Diamond model over the Pendleton's model during simulation debriefs, due to a significant improvement in self-efficacy scores. These findings contribute to a gap in literature around direct comparison of debrief models within mental health simulation training. They also support studies where the Diamond model has yielded significant improvements in human factors skills previously. The results raise the importance of the consideration of debrief model used within simulation training, evidencing potential advantages to improving participant self-efficacy and learning outcomes. This research lays the foundation for future longitudinal or explanatory research to further unpack why the Diamond debrief model is more effective in increasing self-efficacy over other models.

Keywords

human factors; non-technical skills; simulation; debrief

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

The long case examination revisited: can hybrid simulation and quantitative scoring checklists improve the format? – the ASSIMILATE ExCELLENCE study.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

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Introduction: Background, Context and Aims

The long case examination in medicine is regarded as an authentic test of clinical competence; however, it has been shown to have low reliability and validity. We hypothesised that hybrid simulation, individual training with an expert trainer, and grading with a quantitative scoring checklist would improve student learning and performance in cardiology long case examinations.

Methods

Scripted histories and scoring checklists for three clinical scenarios in cardiology were co-created and refined through iterative consensus by a panel of clinical experts; these were then paired with recordings of auscultatory findings from three actual patients with known valvular heart disease. A wearable vest with embedded pressure-sensitive panel speakers was developed to transmit these recordings when examined at the standard auscultation points. Junior medical students at RCSI volunteered for a series of three formative long case examinations in cardiology (LC1 – LC3) using this hybrid simulation (Figure 1a). Participants were randomised into two groups: Group 1 received individual teaching from an expert trainer between LC1 and LC2; Group 2 received the same intervention between LC2 and LC3. Each participant's long case examination performance was recorded and blindly scored by two peer participants and two faculty examiners. Data are presented as number (%), mean \pm standard deviation, or median (interquartile range). Group comparisons were made using the unpaired t-test. Inter-observer variability was assessed using the Intraclass Correlation Coefficient (ICC).

Results & Discussion

Sixty-eight participants were included in the study (age 27.6 ± 0.1 years; 74% female) and randomised into two groups; there were no significant differences in baseline characteristics between groups. Overall, the median total faculty examiner score was 39.8% (35.8 – 44.6) in LC1 and increased to 63.3% (56.9 – 66.4) in LC3. A comparison of the mean total faculty examiner scores between cases and groups is shown in Figure 1b. Using the novel checklist, ICC were excellent between faculty examiners in all cases: ICC .994 – .997 ($p < .001$); correlation between peer and faculty examiners improved in LC2 after participants had undertaken LC1 and graded their peers: ICC .857 – .867 ($p < .001$).

Our programme of learning that used hybrid simulation, individual teaching with an expert trainer, and repeated peer assessment with a quantitative scoring checklist improved medical student performances in sequential formative long

case examinations in clinical cardiology. Moreover, the agreement between blinded faculty examiners was excellent using our novel scoring checklist. As such, we suggest that both hybrid simulation and scoring checklists have the potential to improve standardization of the long case format and allow its more rigorous use as a high-stakes summative examination.

Keywords

cardiology; clinical skills; long case examination; hybrid simulation; checklist

References/Acknowledgements (Vancouver Citation style)

N/A

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SOCIETY FOR
SIMULATION IN EUROPE

The perception of SET 118 Modena Emergency providers after the NEXUS experimental training. A descriptive qualitative study.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

The NEXUS PROJECT's rationale is developed thanks to the necessity of incrementing the patient's safety and the efficiency of the provided performances, notation available at international grade (de Bienassis et al., 2021; WHO, 2018), and developing training programs focused on the strengthening of the non-technical skills, necessary for fulfilling the medical staff's professional knowledge. The experience lived by the operators and their perceivable contentment after the implementation of a brand-new learning model is still not thoroughly investigated, as a matter of fact the present research is created due to the necessity of exploring the sensations, impressions, and gratifications experienced throughout the sperimental training NEXUS.

Methods

The research, monocentric, qualitative phenomenological-eidetic descriptive, was undertaken by presenting a collective of employees of the SET 118 Modena Emergency, who were complying with the eligibility criteria, a semi-structured interview constituted by four open-ended questions. All the subjects who had provided their consent to take part of the research among the experimental course developed by the Team were enlisted consecutively. During the interviews the participants were asked to point out through snowball sampling other eventual subjects that could have offered different points of view or themes to further examine. The procedure chosen in order to guide the analysis of the interviews and to grant the utmost adhesion for what concerns the claims of the interviewees is the so-called "Colaizzi". Furthermore, the participants filed a questionnaire with the aim of describing the characteristics of the attendees under study and, ultimately, a convergent triangulation of qualitative and quantitative datas was applied in order to interpret them in a side-by-side comparison.

Results & Discussion

The qualitative study evidenced a high level of satisfaction within the participants upon completion, level achieved thanks to multiple themes, namely Teamwork, Progress, Emotion, Formation and Communication. The analysis of the interview allowed the development of lots of hypothesis regarding the benefits and necessity of implementing education pathways structured and focused around the growth of non-technical capabilities; particularly for what concerns the development of the human factor, that has been associated with a perceived amelioration in performances, team organisation, the implemented communicative processes, formulation of decision-making processes, reliability of provided performances, of blunder's prevention and an improvement of working satisfaction assessed by the partakers. Further quantitative examinations will be fundamental to establish the effectiveness of the Course on performances, on the outcomes and the patient's safety.

Keywords

High Fidelity Simulation; Patient Safety; Non-Technical Skills; Human Factors; Prehospital

References/Acknowledgements (Vancouver Citation style)

We thank the AULS Modena and the SET 118 Modena Emergency training managers for contributing to the research. We thank the healthcare providers who decided to participate in the study. We thank Alberto Zamboni, Paola Ferri, Alessandro Monesi and Arturo Conte for their valuable contributions.

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SOCIETY FOR
SIMULATION IN EUROPE

The role of simulation-based learning in pediatric anesthesiology: assessment of participants' confidence following use of high-fidelity simulation course

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

Simulation-based learning (SBL) is a well-validated training method that has been shown to effectively improve medical knowledge and the development of technical and non-technical skills. In recent years, growing evidence supports its use in anesthesiology as an educational tool to improve clinical reasoning, decision-making skills and multidisciplinary crisis management attitudes in a realistic, yet safe, environment.

This study aimed to assess the impact of high-fidelity SBL in pediatric anesthesia on participant's self-perceived confidence in managing perioperative pediatric emergencies.

Methods

A 12-hour high-fidelity simulation (Pediatric HAL® and Newborn Tory® from Gaumard™) course in pediatric anesthesia was developed at Centro de Simulação Clínica da Universidade de Aveiro, which also included interactive workshops to practice technical skills. Twenty-nine participants were group randomized into six perioperative pediatric crisis, each followed by a debriefing carried out by pediatric expertise facilitators. Participants were asked to fill a pre- and post-simulation questionnaire and self-score their course motivation and confidence in technical skills and pediatric emergencies, using a 5 point Likert Scale. Other questions regarding SBL relevance in anesthesia were included in the questionnaire.

Results & Discussion

All 29 pre- and post-simulation questionnaires were completed. Participants included 18 anesthesiology trainees and 11 anesthesiology consultants with variable pediatric experience. The majority of participants (78,57%, N=29) were strongly motivated to perform clinical scenarios in the simulator, with motivation scores improving post-simulation to 92,86% (N=29). Thus, 89,65% (N=29) strongly agreed that SBL could improve their professional performance, increasing to

96,43% post-stimulation. A total of 93,10% (N=29) strongly favored standard SBL as part of anesthesiology residency training. From our preliminary statistical analysis, confidence levels in procedural skills increased in all four domains of the questionnaire (vascular access, airway management, regional anesthesia, neonatal resuscitation) after the simulation-based intervention. Concerning the management of pediatric emergencies, overall confidence scores also increased. None of the items analysed showed a decrease in confidence levels.

In past decades, anesthesiology has played a leadership role in the development and integration of SBL into medical education, enhancing patient safety and effective crisis management. Pediatric anesthesia is often described as a high-risk and low error tolerance clinical field, where the implementation of SBL can offer valuable management skills. In this study, overall confidence scores and satisfaction towards SBL were high, reinforcing its potential as a tool to acquire competencies in technical and non-technical skills, particularly in challenging fields such as pediatrics.

Keywords

simulation-based learning; high-fidelity simulation; pediatric anesthesiology; pediatric emergencies;

References/Acknowledgements (Vancouver Citation style)

Pediatric Anesthesia. 2017;1–7; Pediatric Anesthesia. 2019;29:753–759; Indian Journal of Anaesthesia. 2019; 63 (11);



The role of the “Domestic care and medical assistance in the conditions of hostilities” training in the Center for Medical Simulation DSMU during the wartime in Ukraine

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

The life of every Ukrainian changed on February 24 in a way that is not possible to change. Everyone chose their front to defend, work and volunteering in the wartime of Russia's armed aggression against Ukraine.

Methods

The main goal our training “Domestic care and medical assistance in the conditions of hostilities” was to transfer experience and practical skills for self-help, to save the life of the victim, eliminate the influence of the damaging factor, to improve communication and quick evacuation from the disaster area. We trained 211 volunteers who joined the Armed Forces of Ukraine and territorial defense of the Dnipro city. The training was conducted in the Center for Medical Simulation DSMU and consisted of theoretical and practical parts. The training included knowledge and practical skills main activities of premedical care.

Results & Discussion

Volunteers were united into small teams learning the most favorable conditions the first aid to the injured, provided quickly and under the direction of one person, they get the algorithm of actions for save a valuable time. They were actively engaged and understood the temporary stop external bleeding by applying a hemostatic tourniquet (standard or improvised), twist or tight dressings, finger pressure of the great vessels, prevention of asphyxia by releasing the upper respiratory tract from mucus, blood, foreign objects, language fixation. During the training volunteers learned to made the application of an aseptic dressing on the wound and burn surface, the immobilization of the damaged limb in the simplest ways using time sheets and improvised means. This training helps all of them to get the practical skills to eliminate the threat to the life of the victim and improve the implementation of medical assistance in combat conditions. Qualitative analysis from volunteers comments found the training method most helpful for them to develop understanding algorithm frameworks, and the practice of the first aid using the practical skills were engaging and interactive.

Keywords

Domestic care training, the conditions of hostilities, wartime training

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

The use of serious game as a learning tool in home care: protocol of a validation study

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

The advent of the Covid-19 pandemic has affected the way professional education is delivered, making way for the increasing use of serious games (SGs) as an educational tool in healthcare. In nursing education, they have been found to be effective in acquiring procedural and clinical reasoning skills. However, the effectiveness of the game is strongly influenced by aspects related to the validity and functionality of the tool. To date, research addressing the validation process of SGs in health education is still quite limited. Therefore, a study was planned to validate a SG, developed within the REACtion project, as an educational tool in home nursing care of elderly subjects.

Methods

The study took as reference the framework developed by Graafland et al. (2014). For content validity, 5 experts in the field of community and family care were involved and asked to use the SG and fill out a relevance questionnaire referring to 5 dimensions of the game: script, tools at hand, activities required during scenario progression, dialogues,

and relational aspects. For face validity, content validity, concurrent, and the quality and usability of the SG, nurses in training at master's degree programs in nursing and midwifery and master's degrees in family and community nursing will be enlisted. A sample of 30 students will be asked to play the game and fill out a questionnaire designed to collect information about: biographical and professional data, the degree of agreement on the educational dimensions of the game and its usability, the verisimilitude of the game in relation to reality, and clinical reasoning.

Results & Discussion

The study will make it possible to refine the SG prototype, offering an innovative educational tool focused on a care approach geared toward the assessment of risk factors and the social and service network typical of the elderly population.

Keywords

serious game, nursing education, simulation game, web based game, real cases

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

The value of collaborative development; our experience fostering health and care simulation-based education and training in Wales

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Simulation Management and Administration

Authors

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Introduction: Background, Context and Aims

Health Education and Improvement Wales (HEIW)'s Simulation Team prides itself on working alongside the health and care simulation-based education and training (SBET) community in Wales to: [1]

- recognise and value national expertise and current simulation activity across Wales
- support the delivery of high quality, interprofessional and accessible SBET across our health and care workforce
- ensure that patients, service users and learners are the central focus of all SBET activity

A definition for collaborative working includes 'Business relationships formed by committed organisations to maximise joint performance for achievement of mutual objectives and creation of additional value'. [2]

An important objective for the Simulation team is to engage, develop a community of practice and facilitate collaborative learning and working to best benefit health and care SBET in Wales.

Methods

Examples of collaborative development between the Simulation Team and others include:

1. 'The All-Wales Simulation Strategy for health and care in Wales' [1] underwent an extensive consultation process, involving simulation experts, learners, lay representatives and the health and care SBET community.
2. 'Faculty Development' resources developed to promote standardised and quality assured training for Simulation Facilitators, was underpinned by thorough exploration of national needs and invited experts from clinical and academic environments to co-create content.
3. The HEIW Simulation Team delivers 3-monthly webinars/conferences, each focussing on different themes, showcasing SBET activity from across Wales, occasionally in partnership with other organisations.

4. 'A quality improvement based framework to guide simulation interventions following key clinical events' has been written by the Simulation Team in conjunction with ASPIH and SESAM.

5. The Simulation Team regularly meets with individuals/teams to discuss what support can be provided to specific areas of work. The team has recently been involved with Maternity and Neonatal engagement events, a key focus for the Welsh Government.

6. The interprofessional SBET (IPSBET) project is bringing together leads from each organisation involved in the delivery of health and care education and training across Wales, collectively working to identify solutions to further develop IPSBET.

Results & Discussion

A collaborative and inclusive approach to working alongside key stakeholders from across Wales, the UK and further afield is fundamental to ensure that our work is relevant and meets both the current and future needs of SBET for the health and care workforce in Wales. [1]

Collaborative working is pivotal for the success of endeavours such as sharing expertise, ideas and resources, promoting best practice, inspiring innovation and identifying collectively beneficial solutions. [1,2]

Keywords

Collaborative working, Simulation

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Title: The impact of structured pre-briefing on medical students' anxiety level and learning experience in medical simulation.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Background: The application of medical simulation as a teaching tool in clinical practice of medical students is mounting, thus the anxiety and psychological safety of learners is of paramount importance.

Aim of the study: The study was to assess the impact of using structured pre-briefing (concept mapping) on the level of psychological safety and anxiety of medical students.

Methods

Methods: Forty-eight medical students were included in the study. Students were divided into two groups: A-Interventional group included 44 students who received structured pre-briefing and the non-interventional (control) group included 40 students that received traditional pre-briefing. The students' anxiety level was measured using a pre-briefing assessment with a short Form of the State-Trait Anxiety Inventory (STAI-6) in addition to filling out a pre-briefing assessment questionnaire. Pearson correlation analysis was applied. The mean difference of parameters was compared using paired Student t-test. The value of $P < 0.5$ was accepted as significant.

Results & Discussion

Results: Anxiety level measured by the STAI-6 score was significantly higher in the control group in comparison with the interventional group of (48.9 ± 15.5) versus (34.9 ± 11.3) with P value of < 0.001 . There was a significant negative correlation between the anxiety level and the student's perception of the pre-briefing ($-r: 0.04$). The perception of pre-briefing experience was shown to be greater for the interventional group than for the control group with P -value < 0.01 . The perception of the pre-briefing experience was shown to be greater for the interventional group who received structured pre-briefing than for the control group ($P < .000$). Furthermore, all the scores of the pre-briefing assessment subscales (learning opportunity, analyzing thoughts and feelings, facilitator role in the pre-briefing) were significantly higher in the interventional group in comparison with control group (P -value < 0.001 , < 0.016 , and < 0.001 respectively).

Conclusion: structured pre-briefing using concept mapping enhances medical students' psychological safety and decreases the anxiety level during simulated clinical experience.

Keywords

Anxiety, simulation, STAI-6, pre-briefing, concept map, structured pre-briefing.

References/Acknowledgements (Vancouver Citation style)

We are thankful to Dr.Jaradat for his contribution to the medical statistics workup.

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Training foundation doctors in management of sexual assault: a pilot simulation

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

In the UK, 1 in 4 women and 1 in 20 men have been raped or sexually assaulted in adulthood¹. Healthcare professionals are likely to encounter this presentation particularly in the Emergency Department (ED), yet it is rarely included in medical school curriculum or UK foundation programme training². Simulation education involving this topic has been used to effectively train nurses and ED doctors in America³⁻⁵ but has not been adequately explored in UK foundation trainees.

Methods

A pilot session was designed to simulate the management of an adult female attending ED after sexual assault. Pre-session learning resources were distributed to participants and resources for personal support were provided at every stage. The session consisted of three groups of six doctors in their second-year post-qualification. One doctor engaged directly with an actor while the group observed separately via an audio-visual feed. A post-session debrief with the actor, participants and a subject matter expert discussed the importance of non-judgemental history taking, non-verbal communication skills and the use of empathy in this scenario. The group also explored the reasoning behind any management advice provided to the victim during the scenario and feedback on performance gaps was provided.

15 participants completed pre- and post-simulation feedback forms, which asked doctors to rank confidence in four aspects on a scale of one to ten and provided opportunity to leave free text comments on the session.

Results & Discussion

This topic is not compulsory within the UK foundation programme or medical school curricula. This is reflected in our results as only two out of the 15 surveyed had prior relevant teaching. Post-session, participants felt significantly more confident in eliciting a history, patient management and understanding the role of SARC (all $p < 0.001$, paired t test). In free text comments, participants emphasised the importance of the debrief, remarked upon excellent pre-session material and praised the use of a patient actor. They also commented that the session improved both medical knowledge and communication skills. Recurring themes in suggestions for improvement were more time to complete the session and more opportunities for wider participation in the scenario itself.

The authors feel that this topic is highly relevant but sadly neglected in current training. This study provides evidence that the use of simulation education can be utilised to improve the knowledge, skills and behaviours required to effectively manage a clinical presentation of sexual assault in an ED.

Keywords

Emergency Department

References/Acknowledgements (Vancouver Citation style)

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ACKNOWLEDGEMENTS

Thank you to Carole Gavin (Emergency medicine consultant at Salford Royal Hospital) for providing advice on relevant resources.



SOCIETY FOR
SIMULATION IN EUROPE

Transforming professional identity in simulation debriefing: a systematic meta-ethnographic synthesis of the simulation literature

Format: Research Studies - Oral Presentations and Short Communications

Topic: Debriefing

Authors

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Introduction: Background, Context and Aims

Debriefing is extensively incorporated in simulation-based education, and there is some evidence relating debriefing to participant learning. However, there is a lack of detailed understanding of how debriefing works and how it enables learning, specifically examining participant-faculty interactions. The existing research which has examined interaction in simulation debriefs is heterogenous in nature and published across different research disciplines, making holistic interpretations of the phenomenon challenging. To further our understanding and simultaneously illuminate current knowledge, a qualitative synthesis is required.

Methods

A meta-ethnography qualitative synthesis was undertaken using Noblit and Hare's seven phase approach to address the research question: how are interactions in simulation debriefing related to participant learning? Searching strategy was based upon the PICOS framework; 10 databases were searched which concluded in November 2020. Included articles were limited to facilitator-guided post-event debriefing. Selected studies were read multiple times and the interpretations of authors of those studies were synthesised to produce new concepts which were further interpreted to produce a new overarching framework to explain the process of learning in simulation debriefs. Data was also extracted in relation to contextual and demographic factors, and to enable quality appraisal which facilitated interpretation and contextualisation of the final findings.

Results & Discussion

Results

Seventeen articles were selected for inclusion. Initial interpretive synthesis generated 37 new translations which were further synthesised to produce a new theoretical framework. At the heart of the framework is a concept of reflective work where participants and faculty recontextualise the simulation experience, bidirectionally with clinical reality: a process which facilitates sense-making. This occurs in a learning milieu where activities such as storytelling; performance evaluation; perspective sharing; agenda setting; and video use are undertaken. The learning milieu can also be influenced by purposeful activities which relive and reconstruct the simulation experience. The outcome of recontextualisation in a psychologically safe space is conceptualisation of new future roles, clinical competence, and professional language development; a process of transforming professional identity.

Discussion

The framework materialises the interactions which take place in debriefings and describe how these are related to the learning process. Aspects of the framework are related to existing literature including research from different methodological positions, and learning theories, particularly Kolb and Mezirow. This work opens further domains for

research including in settings not yet undertaken and thus not represented in the framework, and secondly, research linked directly to the framework.

Keywords

debrief; learning; qualitative review; synthesis; meta-ethnography; simulation; interaction

References/Acknowledgements (Vancouver Citation style)

Acknowledgements:

Dr Anne McKee provided supervisory support to the first author.

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SOCIETY FOR
SIMULATION IN EUROPE

Trombectomy simulation - cutting important minutes by better processes, teamwork and professional performance

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Introduction: Background, Context and Aims

Mechanical thrombectomy is indicated for patients with acute ischemic stroke due to a large artery occlusion. For every minute delay of thrombectomy, two million brain cells die. Thus, avoiding delays to treatment will increase the number of patients with good clinical outcome. Several different units and professions are involved; neurology, radiology, interventional neuroradiology, anaesthesia. A structured quality improvement project including team simulation has resulted in improved working methods and better quality of care such as shorter time from arrival at hospital to start of thrombectomy. Reports from the national quality register(1) shows that Sahlgrenska University hospital have the best results in Sweden regarding arrival to neurointerventional-lab to start of thrombectomy.

Methods

The aim of this abstract is to describe how simulation contributed to this project:

Project design: First step was to obtain information about the flow and the obstacles from all the professions involved.

Second step was to simulate a pilot patient scenario -step by step- clarifying the flow and the roles of the different specialties involved. Third step was to identify critical moments in the process which we then simulated in situ – both to train the staff and to improve the process. The simulations have been carried out regularly with approximately 260 participants since the start in 2018.

Scenario design and debriefing: Scenarios are designed based on common stroke presentations. A 25-min scenario conducted in situ -initially in the computed tomography(CT) room where patients with stroke arrive, followed by transfer to the neurointerventional-lab where the thrombectomy is conducted. Thirteen staff members participate in every simulation, with up to another five staff observing the simulation. The debriefing is conducted for a further 45 min. The debrief is led by an experienced simulation debriefer who is also a senior clinician.

The large group debrief are targeted towards practitioners involved in the simulation but with observers also encouraged. The facilitator prompts reflection on the clinical processes and enables discussions between providers to identify areas that can be improved.

Results & Discussion

This project combining simulation with other quality improvement methods has a positive effect on both patient outcomes, system performance and professional development(2). Each team member has clear responsibilities well-known by everyone in the team. Effective team communication strategies are frequently applied after the start of the

project. Adjustments have been made improving the process including time effectiveness and logistics.

Keywords

neurology, interventional radiology, anesthesia

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Turning up The Heat - A mixed method approach to Implementing MAP (Management of Aggression Program) simulation training in an multidisciplinary unit at Stavanger University Hospital

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

In 2022, Stavanger University Hospital opened a multidisciplinary unit for patients with acute complex health challenges within somatic, psychiatry and substance abuse, staffed with health professionals from both the somatic and psychiatric clinics– TOBA (Tverrfaglig Observasjons- og Behandlingsenhet/Multidisciplinary Observation and Treatment Unit). The Norwegian Management of Aggression Program (MAP) was launched in 2020 as a nationwide aggression prevention program, implemented in the psychiatric units at Stavanger University Hospital. However, this is quite new to the somatic, which relies on assistance from hospital security guards when dealing with highly aggressive patients. Somatic staff and security guards receive basic training in aggression management, but clinical incidents and concerns among staff created the need to (improve?) their competence. To meet this training need we will use a mixed-method approach – combining in-situ simulation with VR-simulation.

Methods

The ward will have weekly simulation trainings, switching between in-situ and VR-simulation. Both modalities will have the same learning objectives related to MAP regarding own ensuring staff safety and de-escalating aggressive patient behaviour. We will include security in the VR-simulations, and together with staff from TOBA, they will experience clinical situations with aggressive patients. By both observing and discussing how experienced staff from the psychiatric ward ensure personal safety, as well as de-escalate the situation, we want to prepare them for the in-situ simulation. In the first in-situ simulations, the staff at TOBA will meet an agitated patient, with potential for aggression, where they too will need to create a safe environment and practice de-escalation according to MAP principles. As the staff gains experience, we will gradually turn up the heat and intensity in the in-situ simulation over a one-year period and include the hospital security in the in-situ simulation training.

Results & Discussion

While neither VR nor in-situ simulation are new methods, the combination of these two have a great potential to enhance the learning outcome. Being able to de-escalate aggressive patients is a skill, and a key factor to succeeding is self-regulation, to be able act therapeutically and meet the patient with respect and empathy in the presence of a perceived threat.

By using VR to let participants both reflect and observe as well as initially attending low intensity in-situ team trainings, we are able to ensure both a safe learning environment and constant progress towards being able to manage real clinical situations.

Keywords

MAP (Management of aggression program), Aggression management, in-situ and VR-simulation, Multidisciplinary

References/Acknowledgements (Vancouver Citation style)

This abstract is submitted by all authors.



SOCIETY FOR
SIMULATION IN EUROPE

Undergraduate Orthopaedic Simulation: How to cope before the Consultant arrives

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

Henrietta Stockdale	NHS Lanarkshire
Kirsten Gold	NHS Lanarkshire
Leith Al-Badran	NHS Lanarkshire
Sharon Docherty	NHS Lanarkshire
Stephen Grant	NHS Lanarkshire

Introduction: Background, Context and Aims

Simulation has become a key component of both postgraduate and undergraduate medical education. The use of simulation in orthopaedics tends to focus on deliberate practice of key operative skills, and less on pre-theatre management of orthopaedic emergencies. As students near the end of their university education, and prepare to enter into foundation training, it becomes increasingly important that they are able to recognise these emergency situations, and understand initial management. This is particularly true in the context of a post-COVID landscape where students have missed out on in-person experiences. New simulation programs are a crucial way of gaining this experience, whilst preserving patient safety.

Methods

We have developed a one-day intensive simulation course at NHS Lanarkshire Medical Education and Training Centre, with learning outcomes constructively aligned to the Glasgow University curriculum. The course is divided into two sessions. The morning consists of short lectures and an introduction to practical skills, including joint aspiration using partial trainers and application of back slabs, the afternoon then allows them to apply the knowledge gained in immersive simulation scenarios and debrief discussions. Each scenario is debriefed by experienced facilitators using the ALOBA method. All candidates are sent feedback questionnaires electronically following completion of the course to assess the effectiveness of the day. Learners were asked to assess various aspects of the course using Likert scales to gauge confidence post-course compared to pre-course as well as with blank space questions.

Results & Discussion

Feedback indicates that the course was well received and all candidates reported that their confidence had significantly improved in both performing skills and in pre-theatre management of orthopaedic emergencies. This course was initially trialled at the end of the previous academic year and has now been integrated into the Musculoskeletal block programme for final-year students in Lanarkshire. This innovative new simulation course fills a gap in student education in the West of Scotland; the future of this course will be to expand it across to the other placement sites to promote consistency of teaching.

Keywords

Orthopaedics; Undergraduate; Simulation

References/Acknowledgements (Vancouver Citation style)

Medical Education and Teaching Centre, NHS Lanarkshire, NES, Scotland



SOCIETY FOR
SIMULATION IN EUROPE

Understanding trauma and its impacts on children and adolescents' mental health: A blended learning course for mental health professionals.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

Authors

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Kiran Virk	Maudsley Learning, South London and Maudsley NHS Foundation Trust

Introduction: Background, Context and Aims

A significant number of children and adolescents are exposed to traumatic life events and are likely to develop PTSD. In community samples, more than two thirds of children report experiencing a traumatic event by age 16 (1). It is imperative that people working with children and adolescents feel confident and have the relevant knowledge and skills in using trauma informed practice.

Methods

This was a 2-day blended learning course designed for mental health professionals working in community Child and Adolescent Mental health Services in Doncaster. The course was delivered face to face and composed of pedagogy and immersive simulation scenarios. The aim of the course was to develop their confidence, knowledge and skills in trauma informed practice. The day involved half a day of didactic teaching followed by three simulated scenarios to enable participants to practice skills learned from the didactic teaching. 10 participants attended the course including a psychologist, CAMHS practitioners, CAMHS nurses, a drama therapist, and a pathway lead.

Psychological safety was first established by group icebreakers and didactic introduction to simulation training, followed by 6 scenarios (3 scenarios each day) including suicidality, self-harm in the context of sexual abuse and difficult family dynamics, eating disorder, complex PTSD, aggression and suspected drug use. The

Maudsley debrief model was used to provide feedback to participants on their contributions and help them learn positively and constructively from the experience, enabling a deeper level of learning, reflection, and group discussions. It covered description, analysis, and application over the course of 40 minutes.

Results & Discussion

Participants were asked to complete a post-course questionnaire to evaluate their learning and satisfaction with the course. Of 7 participants who completed this, 86% of participants responded "Good" or "Excellent" to how well the course met its learning objectives, the relevance of the scenarios, and usefulness of the course for their practice.

Additionally, qualitative data highlighted learning in relation to the importance of debriefs and reflective practice, as well as assessing and intervening in trauma in young people. Finally, participants shared various changes they intend to make to their practice post-course, including creating more spaces to reflect with colleagues, recognising the non-verbal indicators of trauma, and using creative strategies to engage the child.

The results demonstrate that the course was effective in enhancing both knowledge and skills, as well as helping the participants in becoming confident in using trauma informed practice.

Keywords

simulation; mental health; children and young people; PTSD

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Unintended consequences of simulation: A framework analysis of the translational outcomes from a simulation programme for early-stage doctors-in-training

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

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Introduction: Background, Context and Aims

Simulation aims to produce 'positive consequences' but the literature warns that simulation may promote over-confidence that goes beyond the practitioners expected level of proficiency: the Dunning-Kruger effect (1,2). This has been reported in medical students where learners undergoing high-fidelity simulation rated their confidence levels greater than peers who did not, with no difference in objective assessment between groups (3). This effect has been further evidenced in a study comparing learners' outcomes in simulation-based education (SBE) to case-based discussion (4). Despite this, there is limited research on how this may translate to early-stage Doctors-in-Training (DIT) operating beyond their competency, a significant patient safety concern.

Aspects of communication and escalation of care are key 'non-technical' learning outcomes of many existing healthcare simulation programmes. Yet, both nationally and internationally, these are consistently identified as the main causes of complaints and negative patient outcomes (5-7).

This study aimed to explore the unintended consequences of a simulation programme for DIT. Specifically, do early-stage DIT use skills learned in simulation beyond their expected competency in relation to communication and escalation of care?

Methods

All early-stage DIT (Foundation year one [FY1]) were invited to participate in an immersive simulation programme across three hospital sites in NHS Lothian, Scotland. Following ethical approval, a voluntary questionnaire was sent to participants after their immersive simulation session, asking them to describe two clinical cases where the programme had directly influenced their clinical practice. Over a five-year period, 528 case reports from 264 individuals were collated and analysed using a deductive framework generated from a combination of the scenario intended learning outcomes and the FY1 curriculum, focusing on communication and escalation of care.

Results & Discussion

Escalation of care was consistently utilised appropriately in clinical practice ("I called for help early") in DIT questionnaires. In contrast, respondents reported adopting the communication skills taught in simulation but reported applying them in inappropriate contexts and without appropriate supervision. Some actions described in clinical practice went beyond the level of expected competency ("to the patient and family, that his cancer was progressing").

Consistent escalation of care is a positive outcome as delays in escalation are associated with an increased incidence of negative outcomes (7,8). However, the communication findings have serious implications for SBE; specifically, how early-stage DIT are taught to escalate challenging communication scenarios and how they acknowledge their own limitations to mitigate unintended consequences. Further work will focus on facilitators and barriers to DIT good communication practices.

Keywords

Medicine, Simulation, Communication, Escalation of care

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SOCIETY FOR
SIMULATION IN EUROPE

Use of Simulation-Based Education to enhance the delivery of Paediatric Emergency On-Call Physiotherapy Training

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Introduction: Background, Context and Aims

Physiotherapists working in acute hospitals in the United Kingdom (UK) are required to deliver emergency on-call (EOC) services for acute respiratory patients during out of hours (OOH) services. Physiotherapists use a range of interventions, some of which are highly technical and present risks to patient safety and comfort if performed incorrectly. It can be difficult to adequately prepare physiotherapists to be able to effectively deliver EOC services particularly in specialist areas such as paediatrics or in district general hospitals where clinical exposure may be limited¹⁻². Simulation-based Education (SBE) is well utilised in medical training and education but remains limited in physiotherapy³. We sought to explore if SBE could be used as an effective method to deliver Physiotherapy EOC training locally.

Methods

We created a two-part, high-fidelity simulation using SimJunior to provide paediatric experience to qualified physiotherapists who are new to on-call work. Learners had limited or no prior exposure to simulation so a comprehensive pre-brief was given to maximise psychological safety. The first simulation required learners to receive a referral phone call, assess an acutely unwell child with Duchenne's muscular dystrophy and initiate airway suction. The second simulation focused on recognising the need for and using a mechanical insufflation/exsufflation (MI:E) device. After each simulation, a comprehensive debrief was performed and the intended learning outcomes fully explored.

Results & Discussion

This is a novel programme designed to improve confidence and skills for physiotherapists' EOC work. It successfully utilises simulation to provide experience of challenging and uncommon presentations. All participants (n=8) agreed or strongly agreed that the session increased their knowledge, skills and confidence. They found having a 'safe clinical environment' to focus on decision making and clinical reasoning particularly useful. A key strength of our simulation was the diversity of faculty. The nurse confederate was played by an experienced paediatric nurse and the discussion facilitated by a doctor trained in debrief without any specialist physiotherapy knowledge. This provoked an interesting discussion as learners were challenged to explain their thinking and reasoning to a non-expert. An expert physiotherapist was in attendance to answer clinical queries and facilitate skills teaching on using suction and the MI:E device. This programme will be further developed to address specific needs highlighted in the feedback such as utilising manual hyperinflation and the management of infants requiring EOC physiotherapy. Simulation is an underused, valuable tool for preparing physiotherapists for EOC work and will become an important part of local physiotherapy induction.

Keywords

Physiotherapy, Respiratory, Paediatrics, Simulation

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SOCIETY FOR
SIMULATION IN EUROPE

Use of interactive software to guide the management of diabetic ketoacidosis in children: a usability and efficacy simulation study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

Diabetic ketoacidosis (DKA) is the most common emergency caused by acute hyperglycemia in children with Type 1 diabetes mellitus, with a heavy burden of morbidity and mortality, although largely preventable. Deviations from the correct management flowchart are strong predictors of a negative outcome. The aim of the study was to test, in a standardized simulation scenario, the usability, and efficacy of a new interactive software (DKA Expert, ZCS Spa), aimed at supporting the clinician in the management of pediatric DKA, according to national ISPED (Italian Society of Pediatric Endocrinology and Diabetology) guidelines.

Methods

To test the software's usability, we first enrolled a group of pediatric residents who performed a high-fidelity simulation on a clinical case of pediatric DKA, using the DKA Expert, after a short briefing in which its features were explained. Afterward, the residents evaluated the software by a validated survey (User Experience Questionnaire, UEQ), rating 6 areas on a scale ranging from -3 to 3, where a value >0.8 represented a positive evaluation. Then, to test the efficacy of the software compared to the use of the printed version of the guidelines, the same simulation scenario was played by groups of pediatric and emergency medicine residents, randomly assigned to be supported by the software or the printed protocol, and deviations from the guidelines were recorded. Four critical actions had to be properly performed - i.e., correct rehydration, potassium supplementation, insulin and glucose solution infusions – at the correct dosage, velocity, and timing.

Results & Discussion

Forty-eight residents were enrolled in the usability study. The overall assessment results of the software for the UEQ scales were all positive (>0.8): the mean score was 1.906 (95%CI 1.577-2.235) for attractiveness, 1.688 (95%CI 1.337-2.038) for efficiency, 1.538 (95%CI 1.162-1.914) for perspicuity, 1.722 (95%CI 1.374-2.071) for dependability, 1.707 (95% CI 1.361-2.052) for stimulation, and 1.594 (95%CI 1.306-1.882) for novelty. Fifty-three residents were enrolled in the efficacy study, 30 pediatrics and 23 emergency medicine residents (25 in the software group and 28 in the printed protocol group). The rate of deviation from the guidelines recorded in the software group was significantly lower than in the printed protocol group (6.2% vs 37.5%, $p=0.0052$).

The interactive software could be a valuable support to the clinician in the management of pediatric DKA, reducing potentially harmful deviations from the protocol.

Keywords

diabetic ketoacidosis, Type 1 diabetes, children, simulation study, digital advisor

References/Acknowledgements (Vancouver Citation style)

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Using 360° Virtual reality and data driven debriefing to tackle racial inequalities training

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Three hundred and sixty-degree (360°) videos are becoming increasingly popular [1], allowing for immersive viewing experiences with high levels of fidelity, accessible via various devices. This is important for ease of use for training NHS staff. Combining Virtual Reality 360° video with a structured debrief helps learners apply the requisite knowledge, skills, and abilities to complex clinical practice situations [2]. Utilising data available through participants' interactions in a Virtual Reality Headset can further enhance learning as it makes the experience more personally relevant for learners leading to higher retention and recall.

Methods

40 users were shown a 360° VR video of 3 characters, focusing on discrimination events for Black, Asian and Minority Ethnic (BAME) staff occurring during the COVID-19 pandemic. The video was shown through a Virtual Reality Headset followed by a debrief using a modified TALK debrief model [3]. Eye tracking data was collected through the Vorti platform while the users viewed the video. This data was then used to structure the debrief, particularly asking if they had noticed a white female hit a wall in the video. According to eye tracking data, 95% of users did not spot this interaction. During the debrief, only 1 user specifically highlighted this interaction before it was mentioned by the debriefer. According to eye tracking data, 100% of viewers witnessed this interaction during the post-debrief viewing. Moreover, during the debrief, 30% of participants unprompted highlighted the black male in the video's behaviour as being 'aggressive', particularly noting 'hand gestures' and 'his raised voice'. None of these users had witnessed the white female staff member hit the wall. By using this data, the debriefer was able to highlight the behaviours and expression of white characters in the video, asking users to rewatch the video focusing on the tone, volume and actions of the white colleagues. After the second viewing of the videos, 100% of users agreed that the white male's tone was the loudest, while the white female's actions were the most 'aggressive'.

Results & Discussion

This data shows the value of utilising 360° video paired with an objective data driven debrief for challenging perceptions in racial inequalities and addressing issues of diversity and inclusion, such as unconscious bias, in the healthcare workforce. This type of training can serve as an innovative tool for research and practice to understand the impact of debrief on staffs' perceptions and interactions in their work.

Keywords

virtual reality, equality diversity and inclusion

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SOCIETY FOR
SIMULATION IN EUROPE

Using a social identity approach to explore the impact of interprofessional simulation on professional relationships

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

Within healthcare, members of different professional groups can hold stereotyped views of one another that may present barriers to interprofessional collaboration.(1) Interprofessional education (IPE) is frequently celebrated as a teaching method that can promote the adoption of collaborative attitudes, skills and behaviours. However, the potentially detrimental effects of IPE are often de-emphasised. This study used the social identity approach (SIA) as a lens to explore the impact of interprofessional simulation on the professional relationships of trainee pharmacists and medical students.(2)

Methods

Across three locations in Scotland, United Kingdom, trainee pharmacists in their foundation training year were paired with medical students to participate in immersive simulation scenarios. Post-scenario debriefing was aided by immediate playback of scenario clips and encouraged articulation of the participants' views of self and others, along with various aspects of identity and the intergroup relations between trainee pharmacists and medical students. Participants were individually interviewed shortly after their simulation session, using a semi-structured interview schedule based on SIA. Transcripts were analysed using template analysis,(3) with the initial coding template developed from sub-categorisations of SIA.

Results & Discussion

Twenty-five interviews were undertaken (15 trainee pharmacists and 10 medical students). Both groups commenced the simulation sessions with strong social identities and fairly rigid prototype-based perceptions, or stereotypes, of out-group members. The results depicted that the interprofessional simulation session had challenged pre-existing stereotypes. Rather than seeing themselves as the cautious, picky, backroom checkers of drug charts, the trainee pharmacists began to see their ability to contribute to acute patient management as important to their self-perception. This alteration of self-stereotypes influenced motivation through self-enhancement. Consequently, group norms were altered via the promotion of joint decision-making in relation to patient care. These findings resonate with recent work which highlights IPE simulation events as 'a place where relationships are forged', with subsequent impact on participants' experience of safety in the real working environment.(4) However, social comparisons focussed on status remained significant, resonating with work suggesting that educational interventions alone may be insufficient to influence engrained professional hierarchies.(5) This study has shown that interprofessional simulation can effectively challenge stereotypes

(including self-stereotypes), but social comparisons may be more difficult to overcome. As IPE continues to be adopted and promoted within simulation-based education, its limitations must be better understood to ensure that the potential value of the educational opportunities is maximized.

Keywords

Pharmacy; Medical Students; Interprofessional; Identity; Relationships; Stereotypes; Hierarchy

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SOCIETY FOR
SIMULATION IN EUROPE

Using an expert patient as a simulated patient with agitation: a pilot study in simulation training

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

Expert patients have been usually linked with training programs in which the chronic patient serves as a source of knowledge and as example to other patients and health providers.

The agitated patient with psychiatric pathology usually generates rejection and fear in professionals, and his approach is influenced by prejudices towards mental illnesses (stigma).

Introducing the figure of the expert patient as a source of knowledge and experience in simulation can be a powerful tool to help others empathize with these patients, "humanizing" the care provided.

No publications have been found with expert patients as simulated patients in clinical mental health simulations.

Methods

We carried out simulated patient selection and training program with the inclusion of expert patients. The program is based on the principles stipulated in the Standards of Best Practice (SOBP) of the Association of Standardized Patient Educators (ASPE).

In the simulation course called: "Non-coercive approach to the patient with psychomotor agitation", an expert patient was selected as a simulated patient to support the training.

The concept of expert patient was introduced in the pre-briefing and briefing. The expert patient worked together with the facilitators in the design and preparation of the scenario, ensuring maximum fidelity.

Also, and in order to ensure psychological safety for students and the simulated patient, the expert patient participated in the verbal de-escalation scenarios, at the beginning of the debriefing of each scenario, at the final conclusions and transfer.

A pilot scenario was carried with an expert patient, an experienced actor in clinical simulation, diagnosed with cyclothymic disorder type 2 and borderline personality disorder, known to have presented episodes of psychomotor agitation in the evolution of their processes. At the time of the simulation the expert patient was in a stable moment of disease, without active symptoms.

Results & Discussion

The results of the pilot are positive, so a quasi-experimental trial will be carried out with intervention and control groups. The Kirkpatrick model will be used to guide the evaluation, learning and impact (up to level 3 of the Kirkpatrick Model) of the training using: pre- and post-training surveys to assess the impact of methods of training and validated questionnaires to collect the opinion on how to treat and care for people with mental illness at 2- and 6-months post-training.

Keywords

Humanizing Care; Clinical practice; Education; Psychiatric nursing; Simulation training; Standardized patients; Stigma; Patient active; Expert patient

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SOCIETY FOR
SIMULATION IN EUROPE

Using realist research and theory to explore complexity in simulation programme implementation

Format: Research Studies - Oral Presentations and Short Communications

Topic: Addressing Emerging Healthcare Challenges

Authors

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Introduction: Background, Context and Aims

Enabling access to simulation-based education for remote-rural healthcare practitioners, irrespective of geography, profession, and workplace context, is challenging. Simulation in healthcare education is acknowledged as a complex service-based intervention yet there is a paucity of research about the implementation of simulation-based interventions across diverse organisational contexts. This PhD study involved a realist synthesis and evaluation exploring what works, for whom, and why? in respect of a national programme for clinical skills and simulation in operation for over 10 years.

Methods

Realist research advocates a theory-driven approach to exploring complex interventions in complex social systems. A realist synthesis of published and grey literature, and stakeholder engagement involved literature review, documentary analysis, fieldtrips, and observation. A realist evaluation, using semi-structured interviews to gather primary data, identified contexts, mechanisms, and outcomes associated with a mobile simulation programme - a complex intervention. Data extraction involved programme theory elicitation, secondary analysis of primary datasets, retroductive theorising and composition of case-based narratives for programme theory testing.

Results & Discussion

The intervention has enabled geographically diverse healthcare and multi-agency partners to access simulation-based education. The delivery and uptake of simulation resources and training opportunities focuses on high-risk-low-frequency events, in remote-rural locations, by medical, nursing and paramedic staff proportionate to the NHS workforce. The principal approach to implementation is via local champions and has seen the intervention embedded as a recurring component of the education programmes in a small number of healthcare communities. Communities of practice have developed or been augmented because of informal networks between educational and clinical colleagues leading to healthcare improvements. However, this complex intervention, is highly socially contingent; subject to relational and dynamic heterogeneous contexts which impact upon accessibility to and useability of this national programme. Successful outcomes are dependent on sociality and causal mechanisms include the nature and strength of relationships, trust, networks, and connectedness of champions within their local and their wider communities. Realist research advocates the explanation of findings through middle-range theories. This study draws upon Lahlou's Installation Theory as a framework to explain the mechanisms which channel or inhibit the intended outcomes of this complex intervention. Refined programme theories offer a realist explanation, critical to building capacity, sustainability and enhancement about infrastructural, institutional, interpersonal, and individual contexts. This original sociologically informed research provides new knowledge about implementing a simulation-based complex intervention, of value to NHS Scotland, and is transferable internationally, where there is limited theory-informed research in simulation.

Keywords

Remote & rural healthcare

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Using simulation as a platform to prepare for Ear, Nose and Throat emergencies in the COVID-19 era and beyond

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

At the onset of COVID-19, the general medical council (GMC) provided provisional registration for final year medical students to help deliver care at a time of extreme pressure on the National Health Service (NHS). Our Ear, Nose and Throat (ENT) department was allocated five of these. Studies consistently demonstrate that ENT is poorly represented on the undergraduate medical curriculum, with the majority of new doctors feeling unprepared for clinical practice. This was exacerbated during the pandemic, as opportunities for learning were more limited. Therefore, we established a simulation-based platform aimed at providing a unique, safe resource for learning. The aim was to improve skills, knowledge and confidence of the new foundation doctors.

Methods

The course has been developed through 5 iterations over 28 months, moving from an initial half-day session covering 2 ENT emergencies, to 2, full-day courses which offer a greater variety of scenarios. Use of participant and faculty feedback, along with input from the NHS Lothian simulation team and Royal College of Surgeons Edinburgh has enabled the ongoing development of this course. We have progressed to providing high-fidelity scenarios across a range of conditions from epistaxis to stridor using technology including SimMan3G mannequin, mask-EdTM, ORSIM nasendoscopy simulator and post-thyroidectomy haematoma models as well as live actors. Since the inception of the course, our ENT faculty have been trained in simulation course design and debriefing techniques in order to enhance the delegates experience.

Results & Discussion

Participant feedback, both post-course and post-ENT placement, has consistently demonstrated that the knowledge and skills acquired have enhanced preparedness for working in ENT, moreover this impact has been sustained throughout their clinical placements. 100% of participants either agreed or strongly agreed that what was learnt on the course significantly improved their confidence in managing the respective emergencies when in clinical practice.

Preparing healthcare professionals adequately is essential to enhancing patient safety. This simulation course has been effective in supporting new doctors in ENT. Its success has resulted in formal incorporation into departmental induction and expansion to a national programme.

Keywords

Simulation, ENT, Multi-disciplinary, Debriefing

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SOCIETY FOR
SIMULATION IN EUROPE

Utilizing Simulation to Decrease Stigma Associated with Opioid Use

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Introduction: Background, Context and Aims

Opioid Use Disorder (OUD) has historically been treated as the social problem of individuals making poor choices. However, OUD is a disease that, when treated effectively, has a recurrence rate no higher than that for other chronic illnesses.¹ Only 10% of people with OUD receive treatment,² in part related to the stigma associated with OUD and concerns for rejection and prejudice.³ Decreasing stigma associated with OUD is crucial to increasing access to treatment.

In this session, we will describe the design, implementation, and impact of The Opioid Simulation in both tabletop and screen-based formats.

Methods

The Opioid Simulation was originally designed as a tabletop experience to provide participants opportunities to understand OUD as a chronic, relapsing disease for which there is treatment and recovery. During the simulation, participants navigate life as either a person living with OUD, healthcare provider, or treatment center peer navigator. Role cards for people with OUD include personal histories based on real stories of people with OUD.

Additionally, to expand the reach of the simulation, a screen-based Opioid Simulation was developed, providing a first-person experience of a pregnant woman with OUD navigating the healthcare system. Participants face choices about seeking a job, relationships, pregnancy, reporting opioid use, and seeking help for OUD. The character's resiliency and pain impact choices available to the character. For example, the decision to take additional opioids results in decreased resiliency and decreased pain, reducing future options.

The debriefings following both the tabletop and screen-based simulations focus on: 1) OUD as a chronic, relapsing disease for which there is treatment and recovery, 2) role of stigma in OUD, 3) impact of resiliency on opioid use.

We have implemented these simulations with undergraduate, graduate, and professional students. Practicing provider participants include emergency medicine residents, fellows, and attendings; leadership of the health system's interprofessional opioid stewardship committee; and emerging leaders selected for a Quality Academy program.

Results & Discussion

A total of 348 learners have experienced either the tabletop or screen-based Opioid Simulation. Data from 261 evaluations showed that at least 94% of participants felt the learning experience and debriefing were valuable, the

simulation would improve their performance in the clinical setting, and they would recommend it to others.

To the authors' knowledge, no previous simulation has allowed learners to examine OUD in the context of stigma. Presentation of this work will include describing the design, implementation, facilitation, and impact of The Opioid Simulation.

Keywords

Stigma, opioid use disorder, tabletop, screen-based

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SOCIETY FOR
SIMULATION IN EUROPE

Ventilation Effectiveness During Paediatric Cardiopulmonary Resuscitation: Simulation-based Comparative Study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

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Introduction: Background, Context and Aims

This prospective simulation-based comparative study aimed to evaluate the efficacy of ventilation during simulated paediatric cardiopulmonary resuscitation (CPR) provided by health care professionals (HCP) and lay rescuers (LR). European Resuscitation Council (ERC) guidelines 2021 were considered standard of care. The primary outcome was the number of effective breaths out of 5 initial CPR breaths before and after structured training. The secondary outcomes were: a sub-analysis of 2 first ventilation attempts, the time to first effective ventilation, and the time to the beginning of chest compressions. We hypothesised, that in HCPs more than 80% of ventilation attempts from 5 initial breaths will be effective (4 out of 5 breaths). In LRs, more than 60% of ventilation attempts (3 out of 5 breaths) and there will be a significant improvement in the number of effective ventilation in both groups after simulation-based training.

Methods

HCP and LR performed 90 seconds of CPR on 2 simulation mannequins: 5 kg Baby and 20 kg Junior. The HCPs provided bag-mask ventilation; LR performed dispatcher-assisted CPR with mouth-to-mouth ventilation. The effectiveness of ventilation (defined as a visible chest rise) was recognized by mannequin software and visually confirmed by trained independent observers (both had to be in concordance to mark a ventilation attempt as effective). The mannequin software obtained measurements of each breath time and chest compressions initiation.

Results & Discussion

Data were obtained from 40 HCPs and 46 LRs. Significant improvement was detected in the number of effective ventilations in Baby in HCP before and after the training 26 (65%) vs. 40 (100%), respectively and in LRs 28 (60.9%) vs. 45 (97.8%), (both $P < 0.001$). The improvement before and after the training in Junior was significant only in the LR group [32 (82.1%) vs. 37 (94.9%), $P = 0.005$], not in HCP group [31 (77.5%) vs. 32 HCP (82.1%), ($P = 0.77$)]. ERC guidelines recommendation to start ventilation with 5 initial breaths in paediatric CPR, was based on the experts' opinion. (1) Other resuscitation guidelines worldwide do not include initial resuscitation breaths in lay rescuers. (2) (3) To our knowledge, this is the first study investigating ventilation effectiveness in paediatric CPR. Our data confirmed that lay rescuers providing dispatcher-assisted CPR are able to deliver effective breaths for both Baby and Junior. Obtained data also

displays the benefit of practical paediatric CPR training by improving the number of effective initial breaths in both HCPs and LRs.

Keywords

paediatric, emergency medicine, CPR

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SOCIETY FOR
SIMULATION IN EUROPE

Virtual Reality Simulation Meets a Need to Train Knowledge, Skills and Abilities for Aeromedical Transport with a Novel Training Platform

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

Aeromedical transport providers must be prepared to deliver complex medical care to critically injured patients during handoff and while in transit. These providers work in teams that do not routinely practice in a transport environment, necessitating frequent re-training for specific tactics, techniques, and procedures (TTPs) required to provide critical care management in flight. Medical simulation training is an evidence-based approach to improving medical readiness. However, traditional simulation modalities are cost-prohibitive and inflexible to changing needs, limiting the utility of these methods for frequent, team-based training. Because it can simulate rare situations with high fidelity at low cost, virtual reality (VR) provides an innovative approach to training these providers. Accordingly, a VR simulation curriculum was developed in collaboration with the United States Air Force to enable learners to practice TTPs for en-route care. This qualitative study aimed to evaluate a VR simulation curriculum for its coverage of aeromedical transport TTPs. We hypothesized that a VR platform could provide substantial coverage of medical decision-making TTPs, demonstrating utility as a teaching modality for both military and civilian transport providers.

Methods

An interdisciplinary working group was formed, consisting of physicians, registered nurses, VR simulation experts, and military aerospace medicine educators. Utilizing aeromedical transport and en-route care clinical practice guidelines, two members independently reviewed the simulation scenario documentation for TTPs utilized throughout the curriculum. The full curriculum TTP descriptions were shared with the working group, who then provided input and revisions. A final list of covered TTPs was then included in a survey distributed to aeromedical transport educators to determine if the selected TTPs were educationally valuable as part of an aeromedical transport training curriculum. The working group reviewed the returned surveys and performed a thematic analysis to summarize the results.

Results & Discussion

The VR aeromedical curriculum working group identified TTPs across 10 medical decision-making simulation scenarios. Key TTPs included evaluating and packaging a critically injured patient, identifying abnormal vital signs, managing increased intracranial pressure, adjusting ventilator settings, providing advanced cardiac life support, performing procedures such as arterial line placement, and communicating effectively with team members. Preliminary responses

from aeromedical transport educators indicated that these TTPs cover substantial depth and breadth that would be of high value for training medical transport providers. While this curriculum was developed specifically for military transport teams, this curriculum also shows potential to be adapted for civilian aeromedical en-route care.

Keywords

virtual reality, aerospace medicine, medical simulation training, qualitative, military

References/Acknowledgements (Vancouver Citation style)

The authors acknowledge funding for this project from the United States Air Force. The authors also acknowledge support from clinical collaborators at the US Air Force School of Aerospace Medicine and Air Methods Corporation.



SOCIETY FOR
SIMULATION IN EUROPE

Virtual reality simulation training in stroke thrombectomy centers with limited patient volume – Simulator performance after training and patient outcome

Format: Research Studies - Oral Presentations and Short Communications

Topic: Surgical and Psychomotor Skills Training

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Introduction: Background, Context and Aims

Stroke is a leading cause of morbidity and mortality worldwide [1], and large vessel occlusion (LVO) strokes have a particularly high risk of poor outcome [2]. Endovascular thrombectomy (EVT) is the treatment of choice for LVO stroke, with a number needed to treat as low as 2.6 for improved clinical outcome [3]. Urgent treatment is critical [4]. In some countries with sparse population and long transfer distances, like Norway, stroke centers with limited patient volume have established EVT, aiming at delivering EVT to all eligible patients in a timely manner.

Virtual reality (VR) simulation training may improve individual skills in performing EVT for interventional radiologists. The aim of the present study was to investigate if VR simulator performance improved after a defined training period at limited volume stroke centers that participate in a Norwegian simulation based quality improvement program. We also investigated patient outcome.

Methods

Interventional radiologists and radiology residents participated in five months EVT skill training on a VR simulator (VIST® G5, Mentice AB, Gothenburg, Sweden). The study design was a before-after study with a pretest, a simulator-training period, and a posttest. The simulator automatically registered procedure time, predefined steps correctly executed, handling errors, contrast volume, fluoroscopy time, and radiation dose exposure. Two simulated EVT cases were used for pretest and repeated for posttest, while seven other cases were used for training. Each participant did a minimum of 30 training cases.

Utilizing the Norwegian Quality Register for Stroke Treatment, we also investigated clinical results after EVT at the participating centers, regarding brain tissue reperfusion, hemorrhagic complications and patient outcome.

Results & Discussion

Nineteen interventional radiologists and radiology residents from three thrombectomy capable stroke centers participated in the study, which took place from 2019 to 2021. The mean improvement in VR simulator performance between pretest and posttest was statistically significant for all measured parameters in both simulated EVT cases, except for contrast volume used in case 1, where it was a non-significant tendency for improvement. The measured EVT patient outcome parameters at all three centers from 2019 to 2021 were well within the recommendations from multisociety consensus guidelines [5]. In conclusion, VR simulation could be helpful in improving the learning curve for interventional radiologists in stroke centers with a limited number of patients.

Keywords

Stroke, thrombectomy, neurology, radiology, virtual reality simulation, task-training

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This project has received an unconditional scholarship from the Laerdal Foundation.

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SOCIETY FOR
SIMULATION IN EUROPE

Virtual reality versus traditional teaching methods in pressure ulcers caring: A randomized control pilot study

Format: Research Studies - Oral Presentations and Short Communications

Topic: Technological Innovation and Technical Operations

Authors

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Introduction: Background, Context and Aims

The introduction of simulation in undergraduate nursing education has led to significant improvements in teaching, giving way to virtual reality (VR) that allows for new learning opportunities (Padilha et al., 2018). Evidence suggests that virtual patients can more effectively improve clinical reasoning or procedural skills (Kononowicz et al., 2019), and enhances satisfaction with the learning experience among nursing students (Padilha et al., 2019) compared to traditional education.

On the other hand, the proper nursing care of chronic wounds, especially pressure ulcers, can reduce economic cost and improve the health-related quality of life of those affected (Welsh, 2018).

The aim of the research is to design, implement and evaluate the effectiveness of a VR environment for ulcer care in second year nursing students and compare it to traditional teaching.

Methods

Intervention study of an experimental exploratory clinical trial with control group and simple randomization. Two teaching methods were compared: the traditional one with task trainer-TT (control group) versus the Virtual Reality glasses method-VR (intervention group). The sample was composed of 93 undergraduated nursing students in the second course of the nursing degree, 46 in the control group and 47 in the intervention group. Four variables were measured pre and post: Knowledge was appraised with the Pressure ulcer knowledge assessment tool- PUKAT 2.0 (Dalli, 2021); Skills, with a simulation based experience (standarized patient); and satisfaction and usability, with the System Usability Scale-Scores- SUS (Aguilar & Villegas, 2016). Related to the data analyses, the evaluation of the impact of the use of the two teaching methods was carried out by covariance methods and the differences between the scores after the intervention and the scores before the intervention were calculated.

Results & Discussion

Descriptive statistics and correlation coefficients of the variables evaluated for each treatment are shown in the table 1. For the gain in knowledge, the two methods had the same performance, regardless of the initial level. Regarding gain in skills, it is observed that teaching with VR obtained the highest values, and that this response was similar in each previous levels of skills.

Consistent with the evidence found that suggests that VR can more effectively improve procedural and skills, in the present research is highlighted that the gain in knowledge and skills is significantly greater to the extent that they present lower initial values. That is, that the improvement gap is higher in those people of Z generation with low initial qualifications.

Keywords

Virtual reality; Pressure ulcer; Nursing student.

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SOCIETY FOR
SIMULATION IN EUROPE

Vital Anaesthesia Simulation Training – capacity building for simulation-based education in low-resource settings.

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Personnel and resource limitations contribute towards avoidable death and disability in low- and middle-income countries (1) . It is estimated that 5 billion of the world's 7 billion people lack access to safe and affordable anaesthesia and surgical care (2) . Anaesthesia providers in low-resource settings (LRS) are invariably overworked, under-resourced and have limited access to ongoing professional development (3). Targeted educational programs represent a viable mechanism for increasing the capacity and quality of surgical and anaesthesia services in LRS. In many LRSs, the ability to deliver simulation-based education (SBE) is limited by cost, lack of contextually relevant teaching materials and shortages of educators with expertise to deliver and debrief simulation (4).

Methods

Vital Anaesthesia Simulation Training (VAST) was founded in 2018 to help overcome barriers to utilisation of SBE in LRS. VAST works with anaesthesia societies and the World Federation of Societies of Anaesthesiologists (WFSA) to bring the benefits of SBE to diverse settings. VAST's pedagogical approach to SBE aligns with best practice principles, centering on educator capacity building and development of contextually informed teaching resources. The VAST Course draws on clinical cases commonly managed in district hospitals in LRS. It is an 'off-the-shelf', highly transportable, 3-day inter-professional program addressing core peri-operative clinical practices and non-technical skills. The VAST Facilitator Course (FC) is paired with the VAST Course in all new locations. The FC teaches key elements of simulation methodology and processes for design, delivery and debriefing inter-professional simulation scenarios. FC graduates are mentored to develop skills during subsequent VAST Courses. In areas with anaesthesia training programs, the 48-week VAST Foundation Year uses SBE to teach the fundamentals of safe anaesthesia practice. All programs are delivered in a blended format, with face-to-face training augmented by on-line resources.

Results & Discussion

Since inception, VAST's programs have been delivered across a variety of locations, by a diverse network of volunteers and support personnel. The figure 'VAST at a glance' provides a high-level overview of the current status of VAST. Strong partnerships and collaboration with in-country leads has contributed to success. VAST Course materials are being translated into Spanish and French. In addition to program delivery, the VAST team conducts research and publication. Previous work has identified a significant improvement in non-technical skills post-course with skill maintenance 4 months later. Future research will focus on identifying the unique competencies for simulation facilitation in LRS with the goal of enhancing pathways for skill development for educators delivering SBE in LRS.

Keywords

Anaesthesia, peri-operative healthcare, safe surgery

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

We Don't Have a Simulation Centre, Can We Simulate?

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

According to the world standards, simulation medicine is being taught in the environment of fully equipped simulation centres. Individual sections of the centre are designed to fulfil specific requirements – Intensive Care Unit /ICU/, operation room, emergency, standard ward. In addition, those facilities are equipped by audio-visual technology and other utilities, which are intended to facilitate the course of the simulation and, at the same time, to ensure its reality. However, the majority of simulation centres are struggling with the issue of financing – whether it is due to their construction, equipment, or securing finances for operation. Therefore, securing sufficient coverage and thus availability of simulations for all healthcare professionals is really challenging, if not impossible.

Methods

Neither our medical faculty, nor the university hospital has a modern, large and equipped simulation centre. Formally, there was a simulation laboratory of two rooms, total area of 50m² and a simple audio-visual technology that was used by the simulation lecturers. Due to COVID-19 pandemic, we lost those rooms and therefore we faced the fact whether to give up or to discover new simulation possibilities. We managed to change our perception of simulations and discovered that a simulation centre is not necessary for effective simulations. Thanks to this, the simulation program for “in situ” simulations across the hospital was created (children emergency, adult emergency, orthopaedics, pulmonology,

radiology, heart surgery ICU, critical care ICU). Doctors and nurses working at these units were involved to enable practice of teamwork in their workplace where they care for their patients. In situ simulations bring new learning-points and findings, that are critically important for operation of the department, the work of health-care professionals and safety of patients.

Results & Discussion

The golden standard is to perform simulation lessons in specialised, financially expensive simulation centres, where it is not possible to ensure full contact with the reality of the healthcare professionals working environment. In situ simulations may be perceived as a very effective and financially advantageous alternative. They can be performed in every hospital at every department without the need of specific equipment. To carry them out, an experienced simulation lecturer, a simulator – not necessarily the most advanced one, and a team of medical professionals working in this environment are needed. The benefit for increased patient safety and the comfort and self-confidence of the medical professionals is much higher, compared to that in the simulation centres.

Keywords

centers, financing, in situ simulation, patient safety

References/Acknowledgements (Vancouver Citation style)

N/A



SOCIETY FOR
SIMULATION IN EUROPE

Which human factors impact on the provision of safe patient care by internal medicine registrars: using critical incident technique to inform the design of a simulation-based curriculum

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

In our complex healthcare systems, the incidence of preventable adverse events impacting on patient safety is unacceptably high, (1) and human factors principles and practices are increasingly being applied to understand and reduce error. (2) Internal medicine (IM) registrars, a senior training grade of doctor in the United Kingdom, are integral to patient safety, particularly during out of hours periods when they are usually the most senior physician on site. (3) The importance of human factor training for IM registrars has been recognised by the Joint Royal Colleges of Physicians Training Board, who have mandated a new curriculum requirement for simulation-based education (SBE) involving human factors, (4) however we do not understand the specific learning needs of this group. We aimed to identify human factor themes relevant to IM registrars to inform the design of a simulation-based curriculum.

Methods

Critical incident technique (CIT) is a practical and focused method of interviewing aimed at identifying important behaviours, skills, or factors that play a key role in determining the outcome of a specific situation. (5) We interviewed IM registrars in Scotland using CIT, exploring their observations during recall of clinical situations where an incident occurred that enhanced or detracted from their ability to provide safe patient care. We have focused on incidents that had a significant positive or negative impact on safe patient care given the intrinsic link between patient safety and human factors. (6) We used content analysis to identify and categorise critical incidents. Human factor training themes relevant to a simulation-based curriculum for IM registrars were identified from these categories.

Results & Discussion

Using CIT, we have explored the factors that influence IM registrars' ability to provide safe patient care and therefore developed a new understanding of IM registrars' priorities and learning needs regarding human factor training. An assessment of learning needs is key in the design and delivery of a curriculum, (7, 8) and here we demonstrate a novel use of CIT methodology to inform a needs analysis for SBE. We are using this information to inform the design and implementation of a national immersive simulation course for IM registrars in Scotland focusing on human factors, the first of its kind worldwide.

Keywords

Internal medicine, non-technical skills, human factors, curriculum

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SOCIETY FOR
SIMULATION IN EUROPE

Which specific team behaviours influence successful outcome in internal medicine simulated cardiac arrest resuscitation?

Format: Research Studies - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

Understanding which team behaviours lead to successful outcomes in cardiac arrest resuscitation could help guide future simulation training. Immersive simulation can provide a valuable modality for research into such behaviours,(1) for example, through the use of behavioural marker systems. European guidelines recommend defibrillation for shockable rhythm cardiac arrests within two minutes, and this measurement may provide evidence of successful team performance.(2) This observational pilot study aimed to determine whether the teamwork behaviours of internal medicine trainees differed when their time to defibrillation (TTD) was under two minutes versus two minutes or longer.

Methods

Following ethical approval, groups of six internal medicine trainee doctors (IMTs) in Scotland participated in a high-fidelity immersive simulation of shockable rhythm cardiac arrest at the Scottish Centre for Simulation and Clinical Human Factors. TTD was recorded and video-recordings of scenarios were viewed and scored by two researchers independently using the Team Emergency Assessment Measure (TEAM) tool.(3,4) The TEAM tool consists of 11 behavioural items scored on a 0 to 4 (never to always) scale and an overall global score on a 1 to 10 scale (poor to excellent). It includes three overarching categories of non-technical skill performance: leadership (two items); teamwork (seven items); and task management (two items). Differences between TEAM scores in the faster TTD versus slower TTD groups, using the two-minute cut off, were compared using Student's t-test.

Results & Discussion

Two researchers scored 138 trainees participating in 23 scenarios, using the TEAM tool. Of 23 teams, 17 achieved defibrillation within two minutes. Those achieving faster TTD achieved higher TEAM scores compared with those taking longer than two minutes ($p = 0.004$). There was a trend for all the individual TEAM items to be scored higher in the faster TTD groups and, in particular, there was a statistically significant difference for the teamwork item, adaptability. Adaptability is a core component of teamwork and is the ability to adjust one's approach based on information gathered, resulting in an altered course of action.(5) In conclusion, this study observed higher TEAM scores with faster defibrillation by IMTs in simulated cardiac arrest scenarios. It highlights the importance of adaptability as a specific team behaviour associated with successful performance during resuscitation.

Keywords

Internal medicine, team behaviours, adaptability, resuscitation

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SOCIETY FOR
SIMULATION IN EUROPE

With a Little help from your Friends? A Peer Assisted Simulation Programme to Enhance Mastery

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Simulation is a core pedagogical approach within the BSc Paramedic Science at St George's University. It is imperative to continually adapt our approach to this education modality and respond to the changing nature of students and their evolving learning needs (Jarvis 2018) in order to ensure preparation for paramedic clinical practice and develop psychological resilience.

Although high fidelity simulations are a successful and central aspect of teaching delivery, it was recognised that for some learners, mastery or deliberate practice (DP) cannot always be achieved via this method (Felix and Schertzer 2020). This is often as a result of resourcing constraints, for example time and space along with psychological stress of learners in the simulated environment (Stecz et al 2021).

Furthermore, it was recognised by the faculty that if a student did not attain the expected standard of practice, that confidence and psychological safety can be adversely affected, which is counterproductive to the learning experience.

Methods

Students were given the opportunity to attempt new simulations designed by the faculty and to also repeat simulations previously undertaken. However rather than the traditional lecturer led approach, here learners were debriefed by a small group of peers.

Students were inducted into this approach by academic staff who provided them with a simple and achievable debriefing framework to ensure an open, curious, constructive, and supportive approach to debriefing (Sandars & Murdoch-Eaton 2016). Safeguarding was also put in place for students, should they require lecturer intervention.

Results & Discussion

These sessions were initially optional, however this had low uptake. It was therefore acknowledged by the academic faculty that to achieve success and avoid tokenism, it was essential that time and space to perform these simulations was embedded into the curriculum.

Along with the opportunity for achieving deliberate practice, there were multifaceted other benefits to this approach including: self-reflection and identification of individual learning needs, development of leadership and communication skills and the promotion of psychological safety and personal resilience which are all key aspects of paramedic practice (HCPC 2022).

This approach also challenges the traditional hierarchical approach to healthcare education and recognises the importance of learner and peer led strategies to support the development of student paramedics.

Keywords

Mastery, Deliberate Practice, Peer Assisted Learning

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

Work environment factors influencing transfer of training from simulation to the workplace in internal medicine

Format: Research Studies - Oral Presentations and Short Communications

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction: Background, Context and Aims

The transfer of training from simulation to the workplace is the aim of simulation-based training interventions. Three main overarching factors are known to influence training transfer: trainee characteristics, training design and work environment influences.⁽¹⁾ Within simulation-based education, the work environment factors influencing transfer of training remain underexplored. Burke and Hutchins' review of training transfer within human resource development literature outlined five work environment influences: opportunity to perform, supervisor and peer support, strategic link, transfer climate and accountability.⁽¹⁾ This study aimed to explore how work environment factors influence the transfer of simulation based training to the workplace for internal medicine trainees in Scotland.

Methods

Internal Medicine Training (IMT) in Scotland includes a three-day boot camp at the Scottish Centre for Simulation and Clinical Human factors as part of its' simulation training strategy. This involves simulation-based mastery learning of procedural skills, high fidelity immersive simulation of acute care scenarios and communication workshops. Following ethical approval, at least three months after their boot camp, trainees were invited to an interview to explore their experiences of transferring IMT boot camp skills into practice. Interviews were anonymised, transcribed verbatim and analysed using template analysis⁽²⁾ using the Burke and Hutchins' five work environment influences as an initial coding template.⁽¹⁾ Member checking interviews were performed with a second cohort of trainees to verify findings.

Results & Discussion

Interviews took place between January 2020 and January 2021 with 16 initial interviews and 10 member checking interviews. Trainees described hindering factors such as a lack of opportunities to perform procedural skills and variable access to leadership roles to transfer the non-technical skills trained to the clinical environment. Regarding supervisory support, this was present for procedural skills initially but not once deemed 'competent' and there was some concerns regarding supervisor skill decay. There was a difficult balance between peer support and peer competition for procedural skills in the workplace. They reported challenges relating to the transfer climate, such as a lack of appropriate equipment and a resistance to change in the workplace, for example introduction of new evidence-based equipment. In terms of enhancing factors, trainees described a strong sense of personal responsibility to transfer their training and described feeling empowered to change practice despite the challenges faced. This study reinforces the notion that our role as medical educators extends beyond the simulation suite or classroom and we must consider workplace factors to improve

the likelihood of training successfully influencing clinical practice.

Keywords

Internal medicine, Transfer of training, immersive simulation, simulation-based mastery learning

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SOCIETY FOR
SIMULATION IN EUROPE

self-reported perceptions of interns on the impact of simulation-based training in medical school.

Format: Research Studies - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Simulation-based training (SBT) has gained further relevance in ensuring procedural skill competence of medical students due to hospital-based training restrictions during Covid-19 pandemic

Methods

An observational retrospective cohort study carried out between February 1, 2022 and April 30, 2022. The study design involved convenient, total sampling of all recent medical graduates (n=60), who pursued internship training in any of the three major hospitals in Bahrain. These graduates had received SBT in the last 2 years of medical school while clerking in medicine, surgery, paediatrics, Obstetrics and Gynaecology, and Family medicine rotations (Total Sessions 60). A previously used questionnaire was modified to include 20 items under four domains: confidence, competence, clinical learning experience, and role modelling. Descriptive statistics was calculated using SPSS software.

Results & Discussion

Most respondents reported improved confidence: greater confidence in clinical clerkship phase (79%), exhibited better clinical skills in assessing/ treating patients independently in hospital setting (76%), agreed that SBT is the best option to learn emergency cases (83%), and offered clarity on expected task in clinical environment (83%). There was no significant difference in perception between genders. A formal orientation to SBT had a significant impact on role modelling outcome ($p=0.045$). The barriers perceived were inadequate training in simulation (45%), reluctance to modify teaching methods (38%), lack of clinical skills comprehension taught by SBT (35%), lack of allocated resources, apathy to learn clinical skills, and time constraint (each 22%). Conclusion: SBT experience in undergraduate medical program was perceived beneficial by interns to enrich clinical skill acquisition, retention, knowledge, and patient care skills. Addressing the barriers to SBT can enhance effectiveness and impact of SBT as an instructional method.

Keywords

perception, Simulation, undergraduate, Simulation based training

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SOCIETY FOR
SIMULATION IN EUROPE

sim induction day: a new experience

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

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Introduction: Background, Context and Aims

From 2016 At the Department of Medicine of the University of Padua, team is involved in different simulation curricula, for medical students and for residents.

The students have generally had a traditional pedagogical experience based just on frontal teaching.

With almost 100 new students every year joining our courses, mostly with little to no previous experience with simulation, we realized the need for an introduction to simulation.

Therefore, we designed an introductory program to simulation to be run in just one day, to help the students understand what simulation is and how to properly embrace this teaching method.

Methods

the program is divided into five different parts, each focusing on a different aspect of simulation.

1 introduction: a plenary welcoming session where the instructors explain the aim

- phase I teamwork

2 simulate, that's why: instructors explain why simulation is so important to enhance patient safety

- phase II teamwork

3 human factor & crm: the facilitators introduce human factors and crisis resource management (crm)

- phase III teamwork

4 meet your mannikin: facilitators introduce the simulation environment

- phase IV teamwork

5 take home message

Teamwork acts as an underlying thread. We introduce the teamwork by showing the Tuckman phases of the development and transformation of a working group into a high-performance team, and, in order to let them experience

this skill, we propose a recreational activity borrowed from the business sector: the Egg Drop Challenge.

Results & Discussion

We have had more and more requests to join simulation programs and less and less time due to logistical difficulties to explain the "rules of the game" to learners. To avoid these mistakes, we have created an Induction Day. Presenting the science of human factors and the CRM method allows us to give learners a primordial toolbox ready for use from the first day of simulation. We begin to create a common language to be developed during the simulation program. Furthermore "Know your environment" is one of the fundamental items of CRM. Thus, we allow learners to become familiar with the teaching tools they will use and the management methods by the teachers of the simulation. We have chosen Teamwork as the common thread because is increasingly becoming the focus of attention in agencies working in high stakes environments. Many health professionals, have never addressed the issue of teamwork during traditional studies and for the first time have the opportunity to reflect and work on it.

Keywords

teamwork, human factors, CRM, induction day, simulation, simulation environment

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SOCIETY FOR
SIMULATION IN EUROPE

‘Win, win, win!’ Delivering large scale simulation for resuscitation training in partnership with medical student teachers

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Curriculum Development and Assessment

Authors

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Introduction: Background, Context and Aims

Although Out of Hospital (OOH) cardiac arrest (CA) is a rare event, it is a significant public health concern and the third leading cause of death in Europe (Gräsner et al., 2016). Early, effective bystander intervention improves chances of survival (Larsen et al., 1993). Basic Life Support (BLS) is an essential skill for all healthcare professionals, with healthcare students being included in this group (General Medical Council, 2020 and Medical Defence Union, 2022). However, many students entering medical school are faced with the tension of low resuscitation self-efficacy (RSE) (Katzner et al., 2013) and an ethical and moral duty to act when faced with a person in cardiac arrest (CA) (Ying Yi-Xie et al., 2019).

Simulation based education (SBE) is a feasible and acceptable component in BLS training for healthcare students (Dick-Smith et al., 2021) but is resource-intense from a staffing perspective.

Methods

With mounting evidence indicating that near-peer facilitators can train new healthcare students in resuscitation skills to a standard at least equivalent or better than senior staff (Harvey et al., 2012 and Binkhorst et al., 2020), Queen's University Belfast (QUB) looked to this pedagogical methodology as a solution not only to challenges with staffing but to enhance the learning experience. A clinical academic with considerable experience in resuscitation training developed a 'Train the Trainer' course and all who attended progressed as medical student teachers.

Medical student teachers were paired and facilitated resuscitation training for groups of twelve. A pre-course didactic lecture guaranteed that small group sessions were dedicated to the deliberate practice of resuscitation skills with formative feedback. Six staff members supported medical student teachers.

Results & Discussion

Post-course evaluation questionnaires revealed that delivering resuscitation training in partnership with medical student teachers enhanced the learning experience for novice medical students and extended benefits to medical student teachers, the university, and the wider community.

Win for first year medical students

First year students rated the course as 4.88/5 and valued the approachability, expertise and vicarious experiences offered by medical student teachers. They praised the content and the format. Students with previous resuscitation training were comparable in their ratings and comments to novice students. The psychologically safe and collaborative

learning environment, paired with social and cognitive congruence of facilitators and learners, maximised learning and resulted in students reporting enhanced RSE and agency.

Win for medical student teachers

Medical student teachers recognised many benefits: resuscitation skills revision, enhancement of teaching and communication skills, portfolio development and enjoyment. Many were motivated by future professional roles and altruism and gained confidence from the experience.

Win for QUB and wider community

Almost three hundred students were trained in BLS in one day within the university at a significant cost reduction on previous models. Staff recognised that this approach offered additional benefits to novice students: role modelling, socialisation of new students within the university and the sharing of informal information about the course. Staff-student relationships were enhanced, and there was a greater sense of community. Some medical student teachers continue to facilitate resuscitation training on a voluntary basis in their local communities.

Keywords

Resuscitation, Emergency Care

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

“Enhancing Preparation for Practice in Critical Care: An inter-disciplinary, multi-modal simulation-based bootcamp”

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

Authors

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Introduction: Background, Context and Aims

Introduction: 1. The most severely unwell patients in the UK are looked after in Critical Care (CC). Safe and successful provision of critical care requires a highly-specialised combination of technical and non-technical skills. 2. As the specialty expands, provision and continuity of care depends increasingly on inter-disciplinary colleagues and non-medical training pathways: e.g. clinical development fellows (CDFs); advanced critical care practitioners (ACCPs). 3. CDFs, in particular, have historically had fewer opportunities for dedicated specialty training. 4. Simulation based education and mastery learning (SBE and SBML) are established impactful educational approaches to improving introductions to real-life clinical practice and acquisition of skills. (1,2) NHS Lothian's modified approach to SBML has enhanced the experience for our learner population (3). 5. We hypothesised that a SBE intervention would engage, support and up-skill a discreet group of learners upon whom we rely on to support service provision in critical care.

Methods

A needs analysis was performed based on survey results from previous CDFs and ACCPs, and review of anticipated clinical activities. A two day SBE event was designed, and delivered for 18 learners, with 7 members of faculty. The event was designed to provide an opportunity for acquisition of core technical and non technical skills in a safe environment using Mastery methodology, simulation and focussed debrief. The objectives focussed on patient safety, departmental efficiency and well being, using an iterative approach to allow the learners to experience and learn from similar information in differing contexts.

Deliberate practice included central venous catheter (CVC) and arterial line (AL) insertion and ultra sound; understanding airway equipment and standardised airway trolleys; protocol driven care using international standards; practicing life support and airway algorithms to manage safe patient care and emergencies within CC; Non technical skills included clinical and communication simulation scenarios including emergency airway management, deteriorating patient, family conversations, discussing death, referral and handover of patients.

Results & Discussion

Immediate evaluation revealed improved confidence scores across all domains covered; gratitude and a feeling of being valued; CVC/AL simulated skill acquisition. Faculty members reported: efficient training opportunity; ability to respond to individual learner needs; anticipated improvement in critical care delivery. Impact upon future clinical practice will be evaluated at 3, 6, 12 months using: learner confidence and wellbeing scores; CVC and Arterial line competence and

consultant feedback. These data will be presented locally and nationally as an intervention with potential for improved team wellbeing, recruitment, service delivery and patient safety.

Keywords

Critical care; ICU; simulation; Mastery; simulated skill acquisition; Enhanced induction; Interprofessional learning

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SOCIETY FOR
SIMULATION IN EUROPE

“Beyond the Emergency”. Health Simulation in the service of Telemedicine for NCD patients management. An innovative Erasmus+ e-Course

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Interprofessional / Team Education and Training

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Introduction: Background, Context and Aims

The “Beyond the Emergency. Telecare for Non-Communicable Diseases through Simulation Techniques-BeEmTel” (www.beemtel.eu) is an Erasmus+ K220 Higher Education project (2021-2024). BeEmTel is driven by the awareness of the weakness of European health systems in relation to the care of fragile patients. The backwardness of the professional training system is unable to address the urgent challenge of reforming the way chronic patients are treated and monitored. BeEmTel gives particular attention to chronic diseases (or Non-Communicable diseases, NCD), which at the European level account for about 80 percent of the causes of mortality in people over 65. The BeEmTel Partnership is convinced that there is an urgent need to promote strategies for improving teaching methods in clinical practice, both face-to-face and remote.

BeEmTel main objective is to create an innovative European curriculum for future physicians, nurses, and social healthcare assistants dedicated to Telecare for NCD through educational tools based on remote (and face-to-face) simulation techniques.

The BeEmTel Partnership - coordinated by the Department of Translational Medicine (DIMET) of the University of Eastern Piedmont (IT) - is composed of 7 Public Entities: 5 European Universities: UPO, Italy, Ludwig Maximilian University-LMU, Germany, University of Thessaly-UTH, Greece, University of Medicine, Pharmacy, Science and Technology in Targu Mures-UMFST, Romania), and 2 Ministerial Institutions: Department for Emergency Situations of the Ministry of the Interior (DSU, Romania) and National Centre for Telemedicine and New Technologies care (ISS, Italy).

Methods

Health Simulation and Telemedicine is still an unusual combination that BeEmTel puts at the center of e-Course, which will start on May 15, 2023, and until March 2024. The BeEmTel course is 160 hours - Completely free of charge and aimed at 250 future professionals of social and health care - 80 hours remotely on the BeEmTel platform, and 80 hours in-person for only 50 learners in the UPO Simnova Simulation Center and the Human Simulation Centre in Munich (HSC).

44 European lecturers with expertise in NCD (diabetes, respiratory diseases, heart failure, Long Covid, oncological diseases), emergency medicine, simulation techniques, Telemedicine, Telenursing, Communication, and Ethics in Digital Environment.

Simulation and Telemedicine are intended by BeEmTel as pillars for new forms of medical and nursing pedagogy. BeEmTel intends to adopt both in-person health simulation and the innovative pedagogical form of distance simulation, called Telesimulation, which makes possible inclusive and high-quality multidisciplinary training. Telesimulation lectures will be structured as virtual scenarios that will allow high-fidelity reproduction of the patient's home environment or a neurological rehabilitation facility. This allows an easy, inclusive and engaging manner to develop learners' clinical skills. In this way, decision-making skills can be developed and learners can get in touch with and become familiar with the practices of remote management of chronic patients through telemedicine tools. Participants will be relatively free to move through the content of the Digital Platform, divided into three thematic boxes. The first box is devoted to NCDs, the second box is devoted to Telemedicine services and tools, traditional and advanced Simulation techniques. This box will include lessons in Telesimulation mode focused on remote patient management (some clinical cases such as heart failure, and neurological rehabilitation). The third box is devoted to the ethical issues of Remote Doctor-Patient Communication under the novel concept of proximity. In both the online and in-person phases, the BeEmTel course will also feature tutorials, thematic forums, and clinical case discussions with a simulated patient.

Results & Discussion

The BeEmTel e-Course will start in May and will be delivered through a Digital Platform. At the time of the Sesam Conference in Lisbon, the immediate expected results are of a full course enrollment of 250 learners, sufficiently gender-balanced from mixed backgrounds of undergraduates in medicine, nursing, psychology, and from different social backgrounds.

The long-term results regard the creation of the Transferability Digital Toolkit (TDT) at the end of the project. The TDT is intended to provide inspiration and guidance to students, trainers, and stakeholders so it may represent a concrete reference handbook for strengthening critical judgment when facing a patient/citizen with a chronic condition.

The BeEmTel digital platform will survive after the end of the Erasmus+ Project and it will allow the constant free availability of TDT.

Implementation of BeEmTel is expected to impact the following people: 1) the beneficiaries of the e-Course; 2) the partners' organizations; 3) the project staff; 4) the general audience potentially interested in BeEmTel's topics (Systemic dimension).

BeEmTel attracted interest among faculty and technical staff. The benevolent acceptance of BeEmTel was recently demonstrated during the Teachers' recruiting for e-Course implementation. The adherence to the e-Course was broad. BeEmTel is expected to have an impact by:

- a) Enhancing the learning experience of all the participants involved, by transferring basic and advanced skills useful and effective for managing chronic degenerative diseases, through innovative forms of distance simulation teaching.
- b) Promoting a new organizational approach to the dissemination of Telemedicine devices.
- c) Increasing motivation of Staff members, Coordinators, and Tutors regarding the innovative and challenging forms of distance learning in an international higher education context.
- d) Influencing other European institutions to adopt a teaching formula based on Telesimulation and other forms of Health Simulation pedagogy aimed at implementing telemedicine for the assistance of NCD patients.

Keywords

Higher Education Erasmus; Non Communicable Diseases; Telemedicine; Health Simulation; Telesimulation; Distance care

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SOCIETY FOR
SIMULATION IN EUROPE

“Keeping Cheryl safe”- a simulated family violence scenario for community services students

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Therapeutic uses of Simulation

Authors

Melissa Ciardulli

Holmesglen Institute

Professor Debra Kiegaldie

Holmesglen Institute

Introduction: Background, Context and Aims

Simulation is designed to replicate real-life situations that students are likely to face when on clinical placement or in their future work (1). Whilst simulation is heavily embedded in higher education healthcare courses, it is less utilised in the vocational education sector. The Faculty of Health Sciences at Holmesglen Institute is home to a world class simulation centre that provides support to teachers in how to use all forms of simulation modalities. Of note, is the work that is done in providing students with opportunities to learn alongside highly skilled simulated participants (actors) in our nursing, allied health, and community services courses.

The Diploma of Community Services traditionally relies on student-to-student role play for practising complex and challenging therapeutic skills. An immersive simulation was introduced as an alternative method to develop these skills. A carefully scripted scenario focused on family violence was written with input from industry experts and simulated participants. The experience aligned with subjects and modules on recognising and responding appropriately to domestic and family violence. Students were briefed on the scenario and the simulation apartment reflected a typical community services outreach office.

Methods

“Cheryl” was introduced to students as a 28-year-old who identified as a Koori (Aboriginal and Torres Strait Islander) woman. She appeared anxious, maintaining little eye contact, and was wearing odd shoes. She lived with her partner and two children and had arrived at the community services outreach requiring an urgent appointment with the support worker. Cheryl had been experiencing family violence and required assistance. She stated that her life was hopeless and that she was exhausted and overwhelmed.

Students were required to respond to the needs of Cheryl and complete written documentation as taught in class. They were asked to manage the difficult conversation using therapeutic communication skills. The students were required to identify and respond to risks, provide immediate intervention and support, demonstrate effective communication and empathy skills, and respond appropriately to the stressful situation using an empowering approach and trauma informed care. Students were then required to identify the holistic needs of Cheryl and discuss immediate options and referral processes.

Results & Discussion

The evaluation revealed that students not only developed therapeutic skills in recognising and responding to domestic and family violence but gained valuable insights into the client experience and in working within a challenging community care environment. The authenticity of the experience demonstrated to educators the value of the simulated participant role in the teaching and learning process and was a feasible alternative to role play.

Keywords

Family violence, simulation scenario, challenging conversations, therapeutic communication

References/Acknowledgements (Vancouver Citation style)

1. Li, Ju, Xue Li, Linlin Gu, Rui Zhang, Rongyan Zhao, Qiaoying Cai, Yanyan Lu, Hui Wang, Qinghui Meng, and Holly Wei. "Effects of simulation-based deliberate practice on nursing students' communication, empathy, and self-efficacy." *Journal of Nursing Education* 58, no. 12 (2019): 681-689.



SOCIETY FOR
SIMULATION IN EUROPE

“Nothing about me without me” - the Indigenous voice in simulation scenario design

Format: Descriptive Work - Oral Presentations and Short Communications

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

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Holmesglen Institute

Introduction: Background, Context and Aims

In Australia and Canada, Indigenous peoples face significant health disparities compared with non-Indigenous peoples. Attributing factors include socioeconomic disadvantage, social exclusion and racism (1, 2). Nursing education plays a key role in reducing Indigenous health inequities, yet many educational approaches have historically come from a place of colonialism, privilege and power (3). The momentum for indigenous health training has progressed significantly over the last decade with the development of the Close the Gap report and the Aboriginal and Torres Strait Islander Health Curriculum Framework in Australia, and the “Truth and Reconciliation Commission of Canada: Call to Action” in Canada. Successful immersive training experiences in Indigenous health have been implemented in both countries however there are challenges in how Indigenous peoples have been included in the development and delivering of these experiences.

Methods

In 2022, a Collaborative Online International Learning (COIL) program was established between Holmesglen Institute in Melbourne, Australia and Northwestern Polytechnic in Alberta, Canada. A range of digital educational technologies were incorporated into the teaching activities including a virtual global classroom and virtual reality (VR) simulations. A new virtual reality module was created on Indigenous Health focused on the First Nations, Métis and Inuit peoples of Canada. Members of the local Indigenous ‘Friendship Centre’ played a pivotal role in developing the VR script and two Indigenous actors played lead roles in the scenario. An additional video was produced where the actors shared their personal experiences of receiving health care and the powerful impact of their contribution in the scenario.

Results & Discussion

The Indigenous led creation of the scenario represented an authentic way to teach culturally safe clinical encounters to students and teachers where the voice of Indigenous peoples could be genuinely heard. Regardless of their country of origin, students highly valued the actor’s portrayal in the VR and the opportunity to hear their lived experience stories. Faculty gained insights into Indigenous history and culture and how to apply that to their own nursing and teaching practices.

Keywords

Indigenous Health, Scenario Design, Virtual Reality, Cultural Safety, Simulated Participants

References/Acknowledgements (Vancouver Citation style)

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SOCIETY FOR
SIMULATION IN EUROPE

“When the obstetrical simulation meets the Emergency Medical Service: an example of translational application”

Format: Research Studies - Oral Presentations and Short Communications

Topic: Patient Safety and Quality Improvement

Authors

Filippo Zemin	University of Padova
Erich Cosmi	University of Padova
Silvia Visentin	University of Padova
OPS Group*	University of Padova

Introduction: Background, Context and Aims

Perinatal events are recognized internationally as indicators of a country's health care quality. It's essential to evaluate the use of the best training strategies to ensure the presence of a trained team for sudden changes in obstetrical assistance, in several conditions.

The birth event can concern practitioners working in the Urgency-Emergency Medical Service (SUEM) center. They are skilled nurses and/or physicians, such as anesthesiologists, who respond to various tasks, such as answering a pregnant patient's call, carrying out the triage, and then sending the doctor or qualified nursing staff for evaluation of pregnant patients at home. The transportability of the pregnant patient to the hospital has to be evaluated, above all in labor; the immediacy of the delivery event, even in conditions of non-communication condition, may lead the operator to assist the patient at home or in an ambulance.

To evaluate the effectiveness of the simulation training course on obstetrical emergencies management for SUEM nursing and medical staff in terms of (1) obstetrical technical skills, (2) reduction of anxiety and inappropriateness about delivery assistance (physiologic and pathologic conditions), (3) feeling of the simulation experience regard the acquisition of knowledge, the development of clinical and critical skills, the self-efficacy and self-confidence in the obstetrical field.

Methods

Skilled nurses and physicians of the SUEM Operational Central Unit of the University Hospital of Padua were enrolled. The course lasted one month. It included a theoretical training part, by algorithms, alternating with practical simulation. The practical stations prompted them to repeat many maneuvers several times. A questionnaire was administered at the end of the course and 3 months later to the participants, to investigate the impact of the training on their subsequent work experience.

Results & Discussion

The participants evaluated the use of visual algorithms and practical simulators with the highest grade (range 0-4); in particular, they believe that a guided repetition of obstetrical maneuvers is the best practice tool. Finally, they affirm, also after 3 months, that the obstetric simulation should be repeated at least once a year, given the low frequency of cases, but the high medical impact, and that they have reduced the degree of anxiety and sense of inappropriateness in their daily actions.

The use of obstetric simulation as an effective tool of practical training is also confirmed in a transversal way in other

specializations, which may include assisting a pregnant patient.

Keywords

Emergency, birth, obstetrical simulation

References/Acknowledgements (Vancouver Citation style)

Pettker CM. Approcci sistematici agli eventi avversi in ostetricia, Parte I: Identificazione e classificazione degli eventi perinatali. 2017 aprile; 41 (3):151-155.

Acknowledgments:

OPS Group (as the second author):

Libera Maria Guerra, Michela Vettore, Annunziata D'Aniello, Cecilia Fiorentino, Pierpaolo Zorzato, Marta Bonvantura, Stefania Carli, Tommaso Vezzaro, Giovanni Pellegrin, Maria Chiara Guerra, Francesca Frigo, Federica Sartor, Irene Marangoni, Sandro Savino, Alessandro Galbiati



SOCIETY FOR
SIMULATION IN EUROPE

'Sim of the Week' project: building simulation into clinical governance systems

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Douglas Maxwell

Consultant in Emergency, Pre-Hospital and Retrieval
Medicine

Lucy Hutton

Advanced Retrieval Practitioner

Introduction & Aims

The clinical environment encountered from working in an aeromedical pre-hospital and retrieval service in remote areas of Scotland is highly demanding and carries inherent risk. A robust and continually evolving clinical governance system is essential in order to mitigate this risk. We have developed a bespoke simulation package that is not only educational, but designed to test out systems and feed back into our governance processes, in order to maximise the impact on patient safety and service improvement.

The aim of this workshop is to demonstrate the applicability and value of such a simulation package, share learning and ultimately promote such an approach for the benefit of patients and internal service development.

Intended Learning Outcomes

1. Discuss the process of setting up an in-situ simulation programme
2. Share experiences, learning, challenges and solutions from this process
3. Demonstrate and discuss applicability to other healthcare systems

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Learning objectives 1 + 2 will be reached with the aid of an interactive presentation, highlighting the journey of our process and engaging discussion along the way.

Learning objectives 2 + 3 will be reached by interactive breakout sessions in small groups, aiming to collectively work through how such a programme could be applied to the respective healthcare setting of the attending audience and / or if such a programme has been attempted within their organisation, highlight global learning / challenges and solutions for the wider learning of the whole group.

The presentation element would equate to approximately 30 - 40% of the time allocated with the remaining 60 - 70% intended for interactive breakout group work.

Educational methods: Interaction and Group Dynamics

Educational methods would include:

- Introduction of purpose, setting of goals and scope of session
- Use of volunteered aims from the participants
- Initial interactive presentation to highlight the process

- Introduction of themes and expansion of these throughout the workshop
- Small group breakout session, focusing on participant experience, ideas and perceived challenges
- Presentation of findings / learning to wider group, aiming at generation of group feedback and interaction
- Oversight support from expert panel to guide discussion
- Summary of findings, themes and learning points
- Closure of session

Expected impact

The intended impact from the session is to impart our experiences from running a bespoke in-situ simulation package to attending audience, with the aim of disseminating learning from this experience and promoting similar models within other healthcare settings. We hope to generate discussion and provoke thoughts on how such a simulation package could be applied to other healthcare settings, how it could be adapted into a governance process and how this could benefit patients.

Target audience

Anyone working in a patient-facing healthcare setting with an interest in simulation and clinical governance.

Level: introductory/ intermediate/ advanced

Intermediate

Maximum number of participants

25

Keywords

In-situ simulation, clinical governance, service improvement, systems evaluation, emergency medicine, pre-hospital medicine

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Closed room.

Audio-visual projector.

Flipchart + pens



SOCIETY FOR
SIMULATION IN EUROPE

A challenge for Healthcare Systems: Management of a simulation Center. Success Criteria.

Format: Workshop

Topic: Simulation Management and Administration

Authors

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G. Ulufer Sivrikaya.	RMK AIMS Academy of Interventional Medicine, Education and Simulation
Daniela Chaló	Clinical Simulation Center of Aveiro University

Introduction & Aims

Simulation training has been significantly spread through the usual training processes of health professionals. Healthcare services need to have simulation structures that allow simulation processes to be organized in healthcare centers, for which it is necessary to have monographic centers with expert professionals in this field. The experience of operating various simulation centers allows us to identify key issues for successful management.

In the first place, the strategic horizon in which the activity is carried out must be established in such a way that it is linked to the needs and expectations of the health system: this includes the relationship with the rest of the agents involved, scientific societies, professional associations and private funders. The model must allow the identification/design of training needs and actions to meet the teaching objectives and assess the learning outcomes. Simulation centers must have an adequate financial structure for their management objectives. Similarly, simulation centers must have the capability to generate and disseminate knowledge in simulation training, facilitate the training of facilitators, help to teach how to configure scenarios, support decision-making for the purchase of equipment and establish networks and communities of practice. An adequate communication policy should not be forgotten. It is also important to ensure that all professionals in the healthcare system have a sense of belonging to the activity of the simulation center.

Intended Learning Outcomes

- Understand the link in between simulation activities, the needs and expectations of the healthcare system.
- Describe the financial structure for an adequate management.
- Analyse the role of the simulation center in terms of generation of knowledge, faculty development, creation of communities of practice.
- Discuss the communication policy of a center.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

10 min - Introduction

Introduction of facilitators and methodology

10min - What is needed for managing a SimCenter?

60 min - Group Work (4 groups) Discuss each learning objective and sharing conclusions

10 min - Closing and transference

Educational methods: Interaction and Group Dynamics

Practical workshop with a participative discussion of topics and sharing experiences, led by experts..

Expected impact

By the end of the workshops, participants will be able to: understand the link in between simulation activities and the needs and expectations of the healthcare system; describe the financial and communication policy for an adequate management; understand the role of the simulation center in terms of generation of knowledge, faculty development, creation of communities of practice.

Target audience

Simulation facilities operators, coordinators and directors. Simulation instructors willing to coordinate simulation activities. Other directors (financial, decision makers, hospital chiefs).

Experience is not required.

Level: introductory/ intermediate/ advanced

Introductory to Advance

Maximum number of participants

24

Keywords

Management. Simulation Center

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Computer, projector, 4 tables, chairs.



SOCIETY FOR
SIMULATION IN EUROPE

A mission to clinical debriefing

Format: Workshop

Topic: Debriefing

Authors

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Introduction & Aims

Studies have highlighted the value of clinical debriefing to improve team performance, knowledge, communication and resilience. Clinical debriefings hold psychological benefits and allow for reflective thinking about improving clinical care. Many investigations revealed several barriers to instituting clinical debriefings. This workshop introduces clinicians to a successful implementation of ongoing clinical debriefings.

Intended Learning Outcomes

Main learning objectives:

Have the ability to start a clinical debriefing program at their home organization.

Secondary objectives:

- o Understand differences between simulation and clinical debriefings.
- o Reflect and generalize on the importance of group reflection and group support to promote resilience and teamwork.
- o Reflection on debriefing objectives, red flags and when not to conduct a clinical debriefing
- o Identify and report technical and non-technical latent safety threats and systems issues.
- o Use listed threats and issues to select worthwhile debriefing topics in a time-compressed environment.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

A two-minute video of clinical care across at two disciplines will be recorded beforehand. This video and possibly a second one will be used throughout the session.

90 min workshop divided as follows:

- 1) Introduction: Presentations and state of the art on clinical debriefings (10min)
- 2) Clinical debriefing techniques explanations: Because there are different clinical debriefing approaches, faculty

members will provide a 5-minute demonstration of their technique followed by questions from the audience. (20min)

3) Clinical debriefing (simulated): Small groups will be formed, each with a faculty member. Participants will be asked to volunteer to act in one of the video roles and one or two volunteers will have a short time to debrief one topic. Faculty will contribute to ensure a safe environment. After each debriefing, group members will be asked to comment and question. After the first breakout session, faculty members will switch groups and will repeat the exercise. Everyone will have at least two different faculty moments. (40min)

4) Closing: Questions & Answers session followed by a take home message (10min)

Estimated time margin of 10min

Educational methods: Interaction and Group Dynamics

Short didactic introduction and demonstration.

Active clinical debriefing will allow participants to try a new skill.

Reflect on successful methods and implementation

Expected impact

Provide concepts and tools to implement a successful Clinical Debriefing program.

Target audience

Physicians, nurses and healthcare educators interested in Clinical Debriefings.

Level: introductory/ intermediate/ advanced

All levels

Maximum number of participants

40

Keywords

Clinical Debriefing, Teamwork, Organizational learning

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

- Projector, sound and screen. We will provide a computer, video and slides.
- We request one table per faculty and enough chairs for participants to sit in roughly equal sized groups.

Download: [Download figure/table](#)



SOCIETY FOR
SIMULATION IN EUROPE

Are my skills good enough? Developing purpose-driven assessment instruments

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

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Sigrun Anna Qvindesland

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Copenhagen Academy for Medical Education and Simulation (CAMES)

Benedicte Skjold-Ødegaard

InterRegSim Norway and Haugesund Hospital

Introduction & Aims

Robust and reliable assessment methods are a prerequisite for the transition from time-based education to competency-based education. In health professions education, educators continue to promote the development assessment instruments with defensible evidence of validity. This ensures that the assessment instrument or test measures the intended construct. Most importantly, if the test is used as a decision-making tool and has consequences, it is important to observe a fair process of deciding a minimum passing standard. What is good enough? How do we decide what is good enough? In this workshop, we will introduce structured approaches to developing assessment instruments and setting minimum passing standards.

Intended Learning Outcomes

By the end of this session, participants will be able:

1. To recognize the importance of robust and reliable assessment instruments with minimum passing standards based on fair and systematic processes
2. To gain knowledge about the different structured approaches to developing assessment instruments and setting minimum passing standards
3. To use structured approaches in their own setting when developing assessment instruments with minimum passing standards

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

TIME IN MINS ACTIVITY

5 Introduction to workshop leads & interactive presentation of workshop participants

10 Introduction to Assessment (Purpose-driven Assessment)

20 Group work: Defining the content of your assessment instruments

10 Standard setting: Defining your Minimum Passing Standards!

10 Think-pair-share: How do you define your minimum passing standards?

10 Approaches to Standard Setting: Structured approaches to setting minimum passing

standards

20 Group work: Set your Minimum Passing standard using a structured approach

5 Summary and Goodbye

Educational methods: Interaction and Group Dynamics

- Interactive sociometry introduction
- Short engaging didactic lecture: Presentation of general assessment framework for skills
- Facilitated group work using lego-building exercise (psychomotor) for skills and assessment
- Plenum summary

Expected impact

Participants will be inspired to return to their workplaces and use the tools that they learned from the workshop to develop assessment instruments and set minimum passing standards using structured approaches

Target audience

Curriculum developers; Simulation educators

Peers who work on advising clinical skills instructors, or clinical skills instructors, skills examiners.

Level: introductory/ intermediate/ advanced

Advanced

Maximum number of participants

30

Keywords

Psychomotor skills, assessment, minimum passing standard, standard setting, feedback

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

AV equipment

Flipcharts

Tables arranged in groups



SOCIETY FOR
SIMULATION IN EUROPE

Assessments in Simulation: why do we need them, how to find or develop the right one for our purpose

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Iva Bursac

Hospital for Sick Children

Introduction & Aims

Assessment in simulation have taken a paramount importance for many reasons. First, training programs across the world and especially in Europe and North America have transitioned to Competency Based Medical Education (CBME). CBME's implementation has mandated multiple assessments of learners, and we have relied on simulation for clinical events that occur rarely and are high stakes or for convenience of deciding what and when to assess. Second, simulation research has taken an important significance and has developed immensely in the past decades. Measuring impact of the simulation endeavours necessitates having the right tools to measure its impact.

In this workshop we describe why assessment in simulation is very important and then move on to discussing what are the criteria for a good assessment. The medical community's focus on assessment is portrayed by the frequently updated frameworks about what constitutes a good assessment. While the validity of assessment tools will always remain a key component, other important considerations are feasibility, acceptability, educational and catalytic effect. Feasibility concerns the practicality of assessment; catalytic and educational effect concerns its ability to support further learning and improve education programs; and acceptability concerns its credibility.

In this workshop we will examine how the elements that form a good assessment might be affected by simulation and how to make sure that assessment we are developing or using still meet the standards.

Intended Learning Outcomes

Describe the importance of assessment in simulation

Discuss the framework for a good assessment

Discuss validity evidence of simulation based assessment tools

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Intro (5 min)

I. Importance of assessment in simulation (20 min)

Large group reflection and discussion about the need for simulation assessments

Wrap up in a mini lecture summarizing the evidence

II. Frameworks for good assessment (30 min)

Mini lecture on the framework

Case study discussion: Taking several assessments and analyzing them using the framework

III. More on Validity (30 min)

Mini- lecture: evidence on validity of simulation as assessment tool involved

Small group exercise: judge the tool

Summary and Wrap up (5 min)

Educational methods: Interaction and Group Dynamics

Mini lecture

Large group reflection

Case study Discussion

Small group exercises

Expected impact

Participants will be able to have a framework for judging assessment tools for the purpose intended.

Target audience

Simulation Educators

Level: introductory/ intermediate/ advanced

Intermediate

Maximum number of participants

40

Keywords

Simulation, assessment, validity, framework for goos assessment

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Projector



SOCIETY FOR
SIMULATION IN EUROPE

Behavioural skills for healthcare professionals: enhancing communications training with interactive performance

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Paul Murphy

Queen's University Belfast

Patricia Holden

Queen's University Belfast

Gerry Gormley

Queen's University Belfast

Introduction & Aims

Communication is vital to healthcare professionals' roles, and suboptimal communication can negatively impact patient care and is a source of complaints and referrals to regulators. The aim of this workshop is to address shortcomings in traditional communications training [1] [2] for challenging conversations, where the focus is on the role of the healthcare professional, rather than on a more holistic approach involving the role and experience of the patient. Techniques from the dramatic arts will be drawn upon to enhance traditional communications training methods. Participants will enhance their communications skills or to use more accurate terminology 'behavioural' skills [3] through deeper empathetic interaction.

1) Neighbour R. The Inner Consultation: how to develop an effective and intuitive consulting style. Oxford: Radcliffe; 2005.

2) Kurtz S, Draper J, Silverman J. Teaching and Learning Communication Skills in Medicine. London: Taylor & Francis; 2004.

3) Murphy P, Nestel D, Gormley GJ. Words matter: towards a new lexicon for 'nontechnical skills' training. Adv Simul. 2019;4(8).

Intended Learning Outcomes

The workshop will provide participants with the requisite skills to enhance their performance respectively as a healthcare professional (HCP) and as a patient. The immersive experience will enable participants to more fully appreciate the embodied or phenomenological perspective of the patient.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Introduction: 10 mins

Simulation scenario familiarisation: 10 mins

Simulation exercise: 45 mins

De-roling exercise: 10 mins

Debrief and discussion leading to close: 15 mins

Total: 90 mins

Educational methods: Interaction and Group Dynamics

Participants will engage in a form of immersive simulation focused on behavioural skills based on a hybrid model of techniques from the fields of actor training, the sociology of emotion, and simulation-based healthcare education.

Expected impact

Participants will learn how to improve the way they make emotional impressions on others through verbal and gestural communication, and also how to manage the impressions made on themselves by others.

Target audience

Healthcare students and professionals

Level: introductory/ intermediate/ advanced

All levels

Maximum number of participants

20

Keywords

behavioural skills, impression management, verbal communication, gestural communication

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

The workshop will require a room with sufficient space for 20 participants and the 3 convenors to move around freely and engage in interactive, person-centred training. At least 23 chairs will be required. Technical equipment to facilitate the projection of PowerPoint slides will be required.



SOCIETY FOR
SIMULATION IN EUROPE

Conversation Analysis: discovers a whole new dimension to professional interactions

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Paulien Harms	University Medical Center Groningen
Ruud Kuipers	Martini Hospital
Jan-Jaap Reinders	University Medical Center Groningen
Laurens Reinke	University Medical Center Groningen
Jaap Tulleken	University Medical Center Groningen

Introduction & Aims

This workshop gives an introduction into using conversation analysis (CA) as a tool for reflection. CA is a method to study human interactions in-depth and on a microanalytic level without making assumptions on a psychological level. A core element of doing conversation analytic research is the recording and transcribing of interactions in a way that they can be accurately analyzed. The transcriptions of those interactions not only show who says what when, but also how someone says something (e.g. prosodic features, hedges and stutters) (Jefferson, 2004). CA is often used in institutional settings like police interrogations, classroom- and medical interactions.

We start with an introduction into what CA is, how data is collected and how to understand and make CA transcriptions. After that we will do a so-called 'data-session'. On existing video fragments, we will perform CA-analyses. In different rounds, the participants will become more familiar with how to look at conversations from a CA perspective and make observations about what is happening in the interactions on a deeper level. For example: what aspects of a speaker's utterance elicit what kind of response? Or what is the meaning of a pause or overlapping speech in interaction?

This workshop will change your perspective on professional interactions!

Intended Learning Outcomes

1. Recognizing the increasing demand for a deeper understanding of professional interactions
2. Understand what CA is and how its transcription system works
3. Learn the different steps that are part of the process of CA
4. Recognize the different fields and settings for which CA is beneficial
5. Experience how subtle changes in interaction can have a huge impact

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

1. Understand the process of how CA works
2. Learn to read and understand CA transcriptions
3. Carry out a 'data-session':
 - Watch and listen to existing video material of interactions in a (simulated) medical setting
 - Make observations

- Share and reflect on interesting fragments together

4. Reflect on the CA way of looking at interactions and discuss how to use it in your own field

Educational methods: Interaction and Group Dynamics

Group session, analyze video material

Expected impact

Acquire awareness of the opportunities of CA as an additional tool for debriefing and analyzing professional interactions. Gaining a new perspective on how to look at human interaction overall.

Target audience

Healthcare professionals, simulation trainers, researchers, educators.

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

20

Keywords

human factors, professional interaction, team training, debriefing, conversation analysis

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Room with tables in U-shape set-up, beamer with projector screen and working sound



SOCIETY FOR
SIMULATION IN EUROPE

Creating Immersive 360 Virtual Reality for Mental Healthcare - From Script to Screen

Format: Workshop

Topic: Technological Innovation and Technical Operations

Authors

Helen Welsh	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Geraldine Clay	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Marta Ortega Vega	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Dr Megan Fisher	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Kiran Virk	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Charles Martina-Middleton	Maudsley Learning, South London and Maudsley NHS Foundation Trust

Introduction & Aims

Since 2016, UK workforce demand for mental health related skills increased by 230% (1). Virtual reality training offers a more cost effective training solution that also provides learners with a higher recall accuracy when compared to traditional e learning methods (2). One way to address the mental health training crisis has been to use virtual reality training as it offers a faster method of delivery and is more cost effective (3). This interactive workshop, informed by psychological theory and practice, aims to help participants gain a stronger understanding of creating 360 video content for Virtual Reality. Starting with idea creation, to filming and final delivery, the workshop will give participants a hands on experience allowing them to take away skills to implement in their mental healthcare training.

Intended Learning Outcomes

In this interactive workshop learners will:

- Gain an insight to a successfully implemented model for filming and creating virtual reality mental healthcare content
- Learn about the research used to influence the efficacy of content created
- Understand the value of adding a debrief to Virtual Reality content to enhance learning and engagement

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

5 mins: Introductions

10 mins: Ice Breaker Activity

10 mins: Think Theatre - How to turn a Simulation idea into a 360 VR Experience for Mental Healthcare.

20 mins: Activity - Putting the theory into practice when designing 360 VR

10 mins: The role of a VR debrief in enhancing learning and engagement

15 mins: Data is your friend - Using research to add further value to your VR content

10 mins: How to create a 360 Video, no matter the budget

10 mins: Wrap up and Q&A.

Educational methods: Interaction and Group Dynamics

Interactive group work

Didactic teaching

Case study examples

Expected impact

- Increased awareness of the potential of 360 VR as an educational tool
- Increased understanding of how to implement debrief as part of a VR experience
- Increased awareness of the practicalities of creating 360 Video at different levels of resource and experience

Target audience

Simulation Faculty and Technicians with an interest in creating 360 Video for Virtual Reality in mental healthcare.

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

30

Keywords

Virtual reality, 360 video, mental health

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Equipment required: Pens and paper/ Whiteboards/ flipcharts/ markers/ Video projector with AV output, TV with ability to connect a miracast dongle, Wifi

We will bring: VR headsets, Insta360 Virtual Reality Camera and Ricoh 360 camera, Ambisonic zoom sound recorder for Virtual Reality.



SOCIETY FOR
SIMULATION IN EUROPE

De-roling techniques for healthcare professionals: learning from the dramatic arts how to change roles and emotional states

Format: Workshop

Topic: Therapeutic uses of Simulation

Authors

Paul Murphy	Queen's University Belfast
Gerry Gormley	Queen's University Belfast
Aaron Vage	Queen's University Belfast
Linda Ní Chianáin	Queen's University Belfast

Introduction & Aims

The aim of this workshop is to address the issue of de-roling skills or rather the relative lack thereof in simulation-based healthcare education (SBHE) and professional life. A comparable situation exists in the world of theatre where de-roling is by far the exception rather than the rule. In both worlds, chronic emotional stress endured in the performance of professional roles in working life can lead to mental and physical health problems, and eventually to burnout and premature exit from the respective profession. Erving Goffman's dramaturgical metaphor has been applied to various fields including medical education to understand the complexity of interacting when performing professional roles (Gormley et al., 2016). Goffman's dramaturgical metaphor will be enhanced in reference to the work of Konstantin Stanislavski who pioneered modern actor training (Stanislavski and Benedetti, 2017). Key techniques from Stanislavski's System will be employed in concert with emotional detachment techniques tested in medical research on mindfulness for addiction (Brewer et al., 2011) to offer a practical approach to de-roling.

- 1) Brewer, J. A., Mallik, S., Babuscio, T. A., Nich, C., Johnson, H. E., Deleone, C. M., Minnix-Cotton, C. A., Byrne, S. A., Kober, H., Weinstein, A. J., Carroll, K. M. and Rounsaville, B. J. (2011) 'Mindfulness training for smoking cessation: Results from a randomized controlled trial', *Drug and Alcohol Dependence*, 119(1-2), pp. 72-80.
- 2) Gormley, G. J., Hodges, B. D., McNaughton, N. and Johnston, J. L. (2016) 'The show must go on? Patients, props and pedagogy in the theatre of the OSCE', *Medical Education*, 50(12), pp. 1237-1240.
- 3) Stanislavski, K. S. and Benedetti, J. (2017) 'An Actor's Work'. London: Routledge.

Intended Learning Outcomes

Participants will learn how to recognise the signs of emotional stress and learn to manage them more effectively. Participants will learn how to manage emotional responses to external stimuli in the moment, and to detach from emotional content to reduce the likelihood of chronic stress.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Introduction: 10 mins

Simulated participant research presentation: 10 mins

Emotional stress physiology research presentation: 10 mins

Simulation exercise focused on challenging conversations: 30 mins

De-roling exercise: 15 mins

Debrief and discussion, leading to close: 15 mins

Educational methods: Interaction and Group Dynamics

Participants will engage in a form of immersive SBHE involving conceptual performance followed by de-roling from the performed roles. The educational methods are based on a hybrid model of techniques from the fields of actor training and medical research on mindfulness for addiction.

Expected impact

Participants will learn about de-roling techniques derived from artistic practice and scientific research in a way that will be directly applicable to SBHE and to healthcare practice in professional life.

Target audience

Healthcare students and professionals

Level: introductory/ intermediate/ advanced

All levels

Maximum number of participants

20

Keywords

De-roling techniques, simulation-based healthcare education, emotional stress, emotion regulation

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

The workshop will require a room with sufficient space for 20 participants and the 4 convenors to move around freely and engage in interactive, person-centred training. At least 24 chairs will be required. Technical equipment to facilitate the projection of PowerPoint slides will be required.



SOCIETY FOR
SIMULATION IN EUROPE

Diversity, Equity, and Inclusion (DEI) by design: How, when and why to design inequity into simulation in order to address it in the wider world.

Format: Workshop

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

Dr Marcela Schilderman	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Anita Bignell	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Helen Welsh	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Dr Kirsten Howson	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Dr Imogen Bidwell	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Dr Megan Fisher	Maudsley Learning, South London and Maudsley NHS Foundation Trust

Introduction & Aims

The disparity in outcomes and experiences for both staff and patients from diverse backgrounds, within the healthcare service, has been thrown into sharp relief by recent events such as COVID-19 [1,2]. Simulation based education provides the safe space and immersive experience that are optimal for addressing the biases that help perpetuate such disparity [3]. Doing this begins with artful and informed construction of course materials, and this will be the focus of this workshop.

Intended Learning Outcomes

By the end of this workshop, participants will:

- further understand the interface between DEI, healthcare and simulation
- be able to adapt existing scenarios to take into account DEI
- be able to create new scenarios with DEI learning objective(s) and foci

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- Introductions [5 minutes]
- Large group carousel exercise exploring protected characteristics within the bio-psycho-social spheres [10 minutes]
- Succinct didactic teaching session on the background and context of EDI in healthcare and simulation [10 minutes]
- Small group exercise focusing on local DEI context of participants and faculty diversity [10 minutes]
- Participants are guided through their own individual EDI adaptations of a template scenario [15 minutes], followed by feedback to the larger group [5 minutes]

- Lightening mini-teach on creating scenarios with a pure EDI focus, without engendering stereotypes [5 minutes] followed by participants being guided through creating their own EDI-centered learning objectives and scenarios [15 minutes]
- Common hurdles in implementing EDI related material and how to overcome them, taken from experience [5 minutes]
- Final feedback to the wider group, wrap up and questions [10 minutes]

Educational methods: Interaction and Group Dynamics

Group discussions
Didactic teaching
Scenario development exercise
Reflective activities

Expected impact

- increased understanding of the interface between DEI, healthcare and simulation
- development of skills to integrate DEI concepts into scenario design
- increased confidence in writing DEI focused learning objectives
- development of new example scenarios to apply in practice

Target audience

Faculty involved in designing simulation scenarios

Level: introductory/ intermediate/ advanced

intermediate

Maximum number of participants

30

Keywords

diversity equity and inclusion, scenario development

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Cabaret layout. Whiteboard/flip chart, markers. Pens, paper. Video projector with AV output.



SOCIETY FOR
SIMULATION IN EUROPE

Don't waste a good mistake, learn from it.

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Kirsty J Freeman

Duke NUS Medical School

Susan Eller

Stanford University

James Tiernan

Royal Infirmary of Edinburgh

Rebecca Szabo

The Royal Women's Hospital

Introduction & Aims

Many simulation technicians, educators and researchers will at some point in time have made one (or more) mistakes as they apply simulation-based theories to their practice. Some of these mistakes can be managed 'on the fly', and have minimal impact on our activities other than personal discomfort. Some mistakes however impact the simulation session, adversely impacting the learners or the faculty. What if we could save others the making the same mistakes?

This workshop brings together a team of international simulation educators, technicians, researchers and leaders to share their experiences on the journey in healthcare simulation. The faculty will reveal the mistakes made along their journey as a catalyst for conversation with the delegates. We will encourage delegates to share their mistakes, and we will work together to discuss how to avoid these mistakes moving forward, or manage them more effectively when they arise. Sharing our mistakes is just as important as sharing our successes. Don't waste a good mistake, learn from it.

Intended Learning Outcomes

- Learning Outcome 1: Recognise that the journey from novice to expert simulation educator, technician, manager or researcher, requires deliberate practice and plenty of mistakes
- Learning Outcome 2: Discuss the common mistakes people make and how we can learn from them
- Learning Outcome 3: Integrate the experiences shared by the faculty and delegates into their own practice

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

5mins: Setting the scene

Polling software to invite audience engagement and interactivity. Why it important to share and learn from our mistakes!
Workshop ground rules.

Polleverywhere to invite audience engagement – who is in the room? Their simulation experience?

30mins: Mistakes we have made – faculty lived experiences

Didactic session providing exemplars from different contexts Each faculty members will share a mistake – what happened, what caused it to happen, what was the impact, what is the learning/solution from your experience

25mins: Mistakes you have made – delegates lived experiences

Small group sharing. This section of the workshop will draw on participants' experiences. In small groups delegates will share mistakes - what happened, what caused it to happen, what was the impact, what is the learning/solution from your

experience Large post-it notes will be positioned at each table to the group to capture experiences.

25min: What are our common mistakes?

Large group facilitated discussion. Each group will summarise their small group discussions, with facilitators synthesizing solutions/learnings from the room, from their experience, and from the literature.

5mins: What now?

Audience reflection on session content. Polleverywhere to encourage audience to reflect on their individual learning from the session and how to implement learnings into their future practice. Audience will be invited to remain active in the SESAM community of practice, sharing their experiences with others.

Educational methods: Interaction and Group Dynamics

- The use of online polling software will enable the presenters to capture learner needs at the commencement of the session, which can then be used at the end of the session to evaluate if their needs have been met.
- Small group sharing
- Large group facilitate discussion

Expected impact

The overarching aim of this workshop is to create a culture of lifelong learning within our simulation community by sharing the experiences of simulationists around the world. Providing a safe space for delegates to reflect on their own experiences and share the challenges and solutions in our varied simulation contexts.

Target audience

Simulation educators, researchers, technicians and managers from all healthcare environments.

Level: introductory/ intermediate/ advanced

With an interactive, learning focused nature of this workshop all levels of delegates are encouraged to attend.

Maximum number of participants

To room capacity

Keywords

NA

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Round tables for small group work; large post-it-notes; roving microphone.



SOCIETY FOR
SIMULATION IN EUROPE

Employing Virtual Reality for Medical Simulation Training

Format: Workshop

Topic: Simulation Management and Administration

Authors

Michael Poppe	SimX, Inc.
Michael Barrie	SimX, Inc.
Nilesh Patel	SimX, Inc.
Jennifer Polson	SimX, Inc.
Ryan J Ribeira	SimX, Inc.
Karthik V Sarma	SimX, Inc.

Introduction & Aims

Simulation training is an integral part of healthcare training. Traditional in-person simulation is highly effective for several applications. However, it has specific requirements – such as specialized equipment, dedicated space, and specially trained technicians – that may not be logistically or financially feasible for many training programs to maintain regularly. Additionally, in-person training became increasingly difficult to facilitate in the face of the recent global pandemic and associated structural changes in workplaces and training programs. Virtual reality (VR) simulation provides an avenue for safe, customizable, distributed medical decision-making training accessible across skill levels and institutional capabilities. While many skills required to moderate and practice in VR do not translate directly from previous simulation experience, such abilities can be attained with relatively little setup. In this workshop, we will illustrate the complementary value of VR training for medical decision-making within current medical simulation paradigms, demonstrate the ease of use of one VR medical simulation platform, practice moderator skills that can be implemented to enhance participant learning, and learn together the natural team-building skills developed through VR training.

Intended Learning Outcomes

1. Identify types of medical knowledge, skills, and abilities (KSAs) that can be trained in VR.
2. Practice VR medical simulation platform as both learner and moderator.
3. Review best practices for facilitating a virtual reality simulation session.
4. Facilitate team-based learning in a simulated high-acuity clinical environment.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

The session will begin with an introduction to medical simulation use cases, detailing several VR training platforms and their utility. For medical decision-making KSAs, there will be a specific description of the demonstration platform and its case-based learning and creation approach. Next, a brief demonstration will be conducted to showcase general VR functionality and flow of a virtual medical scenario. Participants will then be divided into groups and invited to participate as learners in a simulation scenario specific to their medical specialty. Following a short break, there will be an overview of moderator best practices in VR, and participants will then have the opportunity to moderate a scenario with their peers. The session will conclude with debriefing, feedback, and questions.

Educational methods: Interaction and Group Dynamics

1. Guided Instruction
2. Simulation
3. Case-Based Learning

Expected impact

By the end of this workshop, attendees will have a general understanding of the capabilities virtual reality simulation provides, its current limitations, and ways training can be enhanced through educator input.

Target audience

1. Simulation Program Directors
2. Medical Trainees (EMT, Nursing, PA, Medical)
3. Training Program Directors

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

50

Keywords

virtual reality, simulation training, simulation operations, technology

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

1. Two separate 15x15 playspaces, which can be cleared of obstructions
2. Two large-screen televisions with HDMI plug-in
3. Audience seating (which can be moved out of the playspaces as needed to make room for simulation).
4. Two tables with chairs (for laptop setup for each television).

Please note, the authors may be able to provide a subset of this equipment if needed



SOCIETY FOR
SIMULATION IN EUROPE

Enrich your qualitative data: a workshop on research interviews and elicitation techniques

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Gerry Gormley	Queen's University Belfast
Linda Ni Chianain	Queen's University Belfast
Paula Houton	Queen's University Belfast

Introduction & Aims

Qualitative research has gained popularity in simulation-based research. Central to such research is the ability to obtain quality data from your research participants. Without this, risks the integrity and robustness of your research. The interview is the most widely used method of data capture in qualitative research. Qualitative interviews can either be structured, unstructured – or somewhere between (semi-structured). They enable researchers to gain data about participants experiences and provide textual material for analysis

Qualitative research interviews are much more than a series of questions. In meaningful research interviews, there is an emphasis on the relational dimensions between the interviewer and interviewee – in co-constructing a shared understanding of their experiences and / or views. By applying a series of techniques in your qualitative research interview, you have the potential to enrich your data, and permit a more meaningful analysis that is firmly rooted in your participants experiences.

In this interactive workshop, we will provide delegates with the opportunity to enhance their qualitative research interview skills. Drawing upon social sciences and other disciplines, we will explore a range of interview elicitation techniques that can enrich data collection by making visible the unverbalizable ('Rich Pictures', 'Photo elicitation' and 'Point of View (PoV) filming'). These techniques allow interviewers to empathize with participants about their particular activity that is being researched, while also providing a new communication register for individuals and communities whose ability to use language is limited

Intended Learning Outcomes

This workshop will enable delegates to :

- 1) Develop their skills in preparing and conducting a qualitative interview
- 2) Understand how Rich pictures, Point of view video camera and Photo Elicitation can enhance data obtained from research interviews
- 3) Encourage delegates to translate such interview skills into their research practice

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- General introductions, 'ground rules' and overview of session
- Introduction to the principles of qualitative research interviews
- Buzz group activity regarding how best to prepare for a qualitative research interview
- Small group work in conducting a qualitative research interview

- Experience a demonstration of qualitative interview elicitation techniques including rich pictures, PoV and photo elicitation
- The workshop will conclude with a summary and key take aways.

Educational methods: Interaction and Group Dynamics

A range of educational techniques will be used in this session including:

- Buzz groups
- Small group work
- Live demonstrations

Expected impact

This workshop aims to enhance delegates skills in conducting a qualitative research interviews.

Target audience

Anyone interested in conducting qualitative research

Level: introductory/ intermediate/ advanced

Introductory/Intermediate

Maximum number of participants

20

Keywords

Qualitative research interview

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Laptop, data projector, audio, flip chart and pens.



SOCIETY FOR
SIMULATION IN EUROPE

Essentials in simulation training design - a pragmatic approach for developing your next training

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Kai Kranz

Swiss Institute of Emergency Medicine (SIRMED)

Nicole Kissling

Swiss Institute of Emergency Medicine (SIRMED)

Irène Zraggen

Swiss Institute of Emergency Medicine (SIRMED)

Introduction & Aims

The foundation of a successful simulation-based training lies in its development process. Throughout this process the relevant information needs to be acquired and based on that, goals, content, methods and resources are to be determined. Finally, the learning activities should carefully be arranged in way that participants can achieve the learning goals.

To support this process, a number of didactic models have been published (1, 2). As those efforts can be very time consuming, a pragmatic structure can help to raise the important questions for obtaining the most relevant information. Furthermore, it focuses on the essential aspects in the arrangement of the learning activities that evolve out of the gained information.

In the workshop we introduce the so called "Berlin Model" developed by Paul Heiman, Gunter Otto and Wolfgang Schulz in the 1960's (3). The core of this model are six consecutive questions:

1. What is the intention?
2. What do I bring to the horizon of the participants?
3. How do I do this?
4. With what means do I realize this?
5. Who do I convey this to?
6. In what situation do I convey this?

For the sake of integrating non-technical skills, we enriched the Berlin Model with parts of the Framework of training development from Flin, O'Connor and Crichton (4). In the end we come up with a one-sheet planning tool that can be used instantly or can be further adapted to individual needs.

References:

- (1) Jank, W., Meyer, H. (1991). Didaktische Modelle (5. Auflage). Cornelsen Verlag
- (2) Thomas, P. A., Kern, D. E., Hughes, M. T., Tackett, S. A., Chen, B. Y. (Eds.). (2022). Curriculum development for medical education - a six step approach (Fourth Edition). Johns Hopkins University Press
- (3) Heimann, P., Otto, G., Schulz, W. (1965). Unterricht - Analyse und Planung. Schroedel
- (4) Flin, R., O'Connor, P., Crichton, M. (2008). Safety at the sharp end - A Guide to Non-Technical Skills. CRC Press, Tayler & Francis Group

Intended Learning Outcomes

By the end of the workshop, the participants can ...

1. ... explain the key factors of course development along the adapted Berlin Model.
2. ... use the adapted Berlin Model to structure the course development process.
3. ... actively gain the relevant information for a proper course development.
4. ... arrange the learning activities towards the learning needs of the individual, team and organisation.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- (10 min) [All] Active introduction and ice-breaking activity
- (10 min) [All] Introduction to the adapted Berlin Model
- (30 min) [in small groups] Applying the adapted Berlin model through in tangible situation
- (20 min) [in small groups] Sketching a rough course schedule based on the obtained information
- (15 min) [All] Brief presentation of the results and reflection
- (5 min) [All] Take home messages

Educational methods: Interaction and Group Dynamics

Group dynamics; Exercises; Reflective discussions;

Expected impact

Providing instructors for simulation-based education a simple but effective tool to structure the process of course development. The tool helps to gain relevant information including the needs assessment and gives direction for arranging the learning activities toward the desired outcome.

Target audience

Instructors in simulation-based education involved in course development

Level: introductory/ intermediate/ advanced

Introductory/intermediate

Maximum number of participants

18

Keywords

Trainings design, curriculum development, needs assessment, methodology, learning goals, resources, didactic planning

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Whiteboard; Flipchart; Moving chairs and tables; AV-equipment and computer/laptop



SOCIETY FOR
SIMULATION IN EUROPE

Expert Team Performance Through the Lens of Healthcare Dyads

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Katie Walker MBA	Maastricht University
Maryam Asoodar PhD	Maastricht University
Jenny Rudolph PhD	Center for Medical Simulation
Michaela Kolbe PhD	Simulation Center University Hospital
Michael Meguerdichian MHPE MD	New York City Simulation Center
Sarah Janssens PhD MD	Mater Hospital, Brisbane
Pim Teunisson PhD MD	Maastricht University

Introduction & Aims

Medical error in healthcare, particularly in acute care environments, remains a major cause of morbidity and mortality. The World Health Organization in 2019[1], reported that unsafe surgical care interventions cause complications in up to 25% of patients, resulting in 1 million deaths during or immediately after surgery annually. Cooper in 2018,[2] specifically suggests the collaboration between each surgeon–anaesthesiologist dyad in the operating room, is perhaps the most critical element of overall operating room team performance. He says a well-functioning dyad is conducive to safe, effective care. Unlike other research in this area, this study focuses entirely on the healthcare dyad as the unit of analysis, not individual analysis.

Dysfunctional collaboration can promote unsafe conditions and contribute to adverse outcomes, not only operating room teams but dominant dyads in other acute care settings such as the emergency room, labor and delivery, critical care, and pediatrics. The goal of this workshop is to further understand and unpack the collaborative practices of expert healthcare dyads during difficult events in acute care settings and how this drives larger team performance. We are studying dyads because in complex situations collaboration of these dyads dictate larger team performance. (Avgerinos & Gokpinar, 2017)

A scoping review of the literature was performed in 2021 and published in BMJ Open in 2022.

<https://bmjopen.bmj.com/content/12/7/e061144.full>. A qualitative research study of expert healthcare dyads was conducted in 2022. Through further examination of expert dyad communication and collaboration, new insights may be found. The theories of distributed cognition, relational coordination and cognitive load theory will underpin this research.

After a short didactic presentation outlining findings from the scoping review and qualitative research, a short video will be shown and debriefed with specific emphasis on dyadic collaboration and the effect on the larger team.

The participants will then discuss the elements unearthed and develop a short sketch to demonstrate understanding. This will be presented to the larger group and debriefed.

Intended Learning Outcomes

- To explore the collaboration activities of expert dyads during a difficult clinical event through video review and debriefing.
- To explore the actions, emotions and cognitive processes that work together to achieve excellence
- To practice expert interactions using identified elements.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This workshop will comprise of 4 parts.

1. Introduction including didactic overview of scoping review and qualitative research on expert dyadic performance (15 mins)
2. Interactive Video review of dyadic collaboration with expert debriefing.
3. Co-identification of the collaborative practices that result in expert performance.
4. Each table will develop a short sketch where identified collaborative practices will be demonstrated followed by expert debriefing and feedback to each group.

(NB. the entire workshop will be interactive apart from the first 10 mins to give background to the importance of this work)

The facilitators and workshop participants will be identifying specific elements either in the video or from their own experience (if they have specific experience in this area) and mapping these against the underpinning theories of distributed cognition, relational coordination, and cognitive load theory. This process will introduce participants to how the theories are used in explaining expert dyadic performance and the importance of this in-depth analysis for improving team performance.

Learnings so far are that effective dyads “co-regulate” each other’s anxiety and help each other gain and regain focus and calm when things get difficult. Effective dyads have shared mental models that are explicitly and implicitly stated and refreshed when needed.

Educational methods: Interaction and Group Dynamics

Collaborative discussion, collaborative debriefing, video review, feedback, co-creating a short role play, Role play review and debrief.

Expected impact

Participants will gain new insights into the collaborative practices of expert dyads and how these practices drive performance of the larger team, to share with their healthcare teams at home. There will also be a facilitated discussion on conditions for successful dyadic leadership and the risks of it in healthcare teams.

Target audience

Simulation Educators, Clinical Educators, Clinicians, Administrators, Researchers

Level: introductory/ intermediate/ advanced

intermediate/advanced

Maximum number of participants

60

Keywords

Relational Coordination, Distributed Cognition, Cognitive Load, Healthcare dyads

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Participants arranged in tables for interactive discussion and group work

Projector for powerpoint and video review.

flipcharts at each table to map collaborative practices

Download: [Download figure/table](#)



SOCIETY FOR
SIMULATION IN EUROPE

Exploring the use of “live tissue training” in learning to manage surgical trauma

Format: Workshop

Topic: Surgical and Psychomotor Skills Training

Authors

Cara Swain

Karolinska Institutet

Natalia Stathakarou

Karolinska Institutet

Klas Karlgren

Karolinska Institutet

Introduction & Aims

Live tissue training is an umbrella phrase used to describe the use of live animals to simulate human patients. Mammals, such as pigs, are anaesthetised for surgeons to practice the management of surgical trauma, and euthanised once training is completed. This type of simulation is controversial, due to ethical concerns, and attempts to justify its use through research is ongoing in published literature.

The aim is to use the workshop as a snowball focus group to produce a consensus expert opinion regarding live tissue training in surgical simulation and potential alternatives. The outcome from the workshop will be a journal article, with attendees invited as co-authors if they wish to be further involved.

Intended Learning Outcomes

- To understand the current evidential basis of live tissue training
- To discuss the requirements for surgical trauma simulation
- To encourage scholarly conversation regarding the use of animal models and alternative technologies in surgical simulation

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

The workshop will begin with a short 10-minute lecture summarising commonly used surgical simulation techniques and technologies and introducing a recent systematic review of published evidence regarding the educational use of live tissue training.

Software (i.e. Mentimeter) will be used to collate basic demographics of the group: profession, stage of training, country where they work, whether they have previously participated in or witnessed live tissue training, experience with alternative human patient simulators and other simulation technologies etc.

The snowball focus group process will begin with attendees being encouraged to reflect on three important aspects or requirements of surgical simulation training and then three points about the use of live animals in simulation, considering the potential for replacement. Attendees will be paired and asked to discuss their thoughts and produce a consensus on the above. Pairs subsequently form groups of four, then groups of 8, until the whole group comes together to conclude the workshop and form a consensus statement. Workshop facilitators will be available throughout to moderate discussions.

Educational methods: Interaction and Group Dynamics

This workshop will be an interactive learning process mostly via peer-led discussion.

Expected impact

Encouragement of attendees to consider how and why surgical simulation is used, and how live animal use can be rationalised, refined, or replaced.

Target audience

Surgeons of all levels; military medical personnel; individuals who are involved with delivery of surgical simulation or development of simulation technologies.

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

16

Keywords

Surgery

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

A single small room: 4 tables with 4 seats at each

Computer and projector with screen to deliver presentation

A4 paper and pens for each attendee; 2 x A2 paper



SOCIETY FOR
SIMULATION IN EUROPE

Forum theatre as an approach to facilitate learning of professionalism

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Camilla Thamdrup	Copenhagen Academy for Medical Education and Simulation (CAMES)
Peter Dieckmann	Copenhagen Academy for Medical Education and Simulation (CAMES)
Birgitte Bruun	Copenhagen Academy for Medical Education and Simulation (CAMES)
Anne Marie Skaarup	Copenhagen Academy for Medical Education and Simulation (CAMES)

Introduction & Aims

This workshop uses Forum Theater as an interactive learning method to help participants develop professionalism with a special focus on the role as "health advocate". Participants will be highly involved in the workshop.

Intended Learning Outcomes

- Outline basic principles of forum theatre as an educational approach
- Articulate how forum theatre can be used to teach the health advocate and communicator roles
- Discuss the possibilities of forum theatre for other topics

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

10 min Short introduction of the faculty and of key principles

10 min Warm up exercise (participants experiences on lifestyle and motivation to change).

60 min Forum theater play

A consultation between a clinician and a patient. The patient presents her situation, including questions and ideas regarding what to do. The consultation unfolds... The scene is not a showcase on best practice. It shows what might take place - with a touch of satire.

After the scene the facilitator will ask: What was at stake? And how did the clinician do? Facilitator gathers comments and instructions to the "actor" playing the clinician.

The scene will be played again with changes. The group will experiment with different approaches and reflect on different ways to address health issues and motivate patients. The facilitator might invite the audience to act out their proposal.

10 min concluding discussion about potentials and limitations of the method.

Educational methods: Interaction and Group Dynamics

The workshop focuses on using a variant of Forum Theater techniques that can be used when training roles as communicator and health advocate. The method builds on similar principles, as classic drama and allows the spectators to see dilemma situations on stage that represent their own dilemmas. This allows for cathartic experiences and deep insights.

The facilitator will invite participants to become cocreators; to get involved in the rewriting the scene, Inducing reflection in and on action. In the process participants will experience how different ways of acting either solve problems or can be ineffective at times. Involving the audience in small group discussions, while the play is halted, allows to share experiences, reflect upon observations, and to foster reflection.

Expected impact

Learn a method on how to explore and improve knowledge and skills regarding communication and human interaction, with the focus on the role as health advocate.

Target audience

All health professionals who do consultation with patients
Educators who teach consultation and communication

Level: introductory/ intermediate/ advanced

intermediate

Maximum number of participants

50

Keywords

Forum Theater, Role play, communication

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

AV-equipment
Floor space to play the scene



SOCIETY FOR
SIMULATION IN EUROPE

Getting Started in Simulation-Based Research

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Samantha Eve Smith

Scottish Centre for Simulation and Clinical Human Factors

Victoria Ruth Tallentire

Scottish Centre for Simulation and Clinical Human Factors

Joanne Kerins

Scottish Centre for Simulation and Clinical Human Factors

Ailsa Hamilton

University of Edinburgh

Nathan Oliver

NHS Lothian

Introduction & Aims

This workshop's facilitators provide the Getting Started in Simulation-Based Research (SBR) course at the Scottish Centre for Simulation. This 90-minute workshop provides a condensed introduction to SBR. We aim to inspire participants and hope they will walk away from this workshop with an outline of their own project to take forward.

Intended Learning Outcomes

By the end of the session, participants will:

1. Understand the difference between simulation as the subject of research, versus simulation as a research tool.
2. Be able to describe the difference between positivist and constructivist research paradigms.
3. Recognise the problem, gap and hook in other papers and use this to inform their own project ideas.
4. Have written a clear, appropriate and feasible research aim.
5. Devise appropriate methods for a project to take forward after the workshop.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

1. Ten minutes of introductions with ice-breaker. Aim to better understand the participants' current experience and understanding of SBR.
2. Thirty minutes of facilitator presentation including audience participation. This will include a chance for participants to try to identify differences between research types, and to identify the problem, gap and hook. We will discuss where to find inspiration for participants' own research projects, and how to construct a research aim. We will make recommendations about data collection and analysis methods best suited to novices.
3. Twenty minutes, spent individually or in pairs, writing own aims and methods for a research project, with a chance to discuss with the facilitators and other participants within small groups as time allows.
4. Twenty-minute activity: ten minutes in a structured feedback conversation on aims and methods from another participant, and ten minutes giving structured feedback on aims and methods to another participant.
5. Five-minute whole group session in which each participant summarises their project idea in fewer than ten words, in order to establish if any potential collaborators exist in the room.
6. Five minutes wrapping up the session.

Educational methods: Interaction and Group Dynamics

As described above, the session will include interactive facilitator presentations, individual writing with peer and facilitator feedback (in pairs), and small group work (discussion of the problem, gap and hook).

Expected impact

We hope that this session will inspire participants to start their own SBR projects. We also aim to identify potential collaborations within the room, to strengthen participants' projects. Each participant should walk away from this workshop with a clear idea of how to construct a SBR project, and a personal plan for getting started.

Target audience

Healthcare professionals who are experienced in simulation-based education but new to SBR.

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

40

Keywords

Research

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Tables arranged in small groups. Screen for PowerPoint please.



SOCIETY FOR
SIMULATION IN EUROPE

Getting more from your sims: harnessing agency formation theory to transform learners' practice

Format: Workshop

Topic: Debriefing

Authors

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Queen's University Belfast

Davina Carr

Queen's University Belfast

Gerry J Gormley

Queen's University Belfast

Introduction & Aims

Transformative Agency through Double Stimulation (TADS) is a theoretically informed model that aims to enhance individuals' skill and behaviours, which has potential use in healthcare education. Informed by the TADS approach, we developed an educational model where participants undergo a simulation, then detailed debrief, followed by a second scenario and debrief. In our practice, we have shown the effectiveness of debrief and immediate repeat simulation in improving participants performances and experiences. This highly interactive and immersive workshop will enable participants to design TADS scenarios and gain tactile experiences by undertaking double simulation, which they can introduce in their institutions.

Intended Learning Outcomes

1. Understand Transformative Agency through Double Stimulation (TADS) application in healthcare education.
2. Acquire knowledge to design and implement a TADS programme.
3. Become proficient in evaluating a TADS framework to gain skills in developing and improving a programme.
4. Gain first-hand experience of performing repeated simulation with effective debriefing.
5. Explore the potential for TADS in an interprofessional approach to enhance multidisciplinary integration.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

1. Introduction and overview of the session format with outline of learning objectives.
2. Discussion of the benefits of double simulation and an approach to designing and implementing a TADS programme.
3. Small group work to explore development of bespoke frameworks, with feedback from facilitators.
4. An interactive component where participants undertake a TADS sequence where groups:
 - a. Design their own scenarios
 - b. Undertake a first scenario followed by debrief
 - c. Undertake a second scenario then a second debriefing
 - d. Explore participants experiences of TADS
5. Identify novel ideas and suggestions after delegates design and participate in their TADS model.
6. Concluding remarks to summarise and consolidate learning.

Educational methods: Interaction and Group Dynamics

Techniques include:

1. Small group work with feedback.
2. Sharing of ideas to generate novel approaches to design and implementation of TADS.
3. Participation in interactive scenarios to provide first-hand experience.

Expected impact

Through acquisition of knowledge and practical experience gained in TADS, participants will be able to design and implement a bespoke double simulation programme in their institutions.

Target audience

Those with an interest in enhancing the effectiveness of their simulation teaching as a method to improve performance and augment experiences gained by learners using TADS.

Level: introductory/ intermediate/ advanced

Any level

Maximum number of participants

24

Keywords

Mutidisciplinary healthcare education

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Resusci-Anne manikin; Automated External Defibrillator; Oxygen mask; Bag-valve-mask; iGel airway; Laptop
Several desks to seat participants



SOCIETY FOR
SIMULATION IN EUROPE

How much does a polar bear weigh? Enough to break the inter-professional ice?

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

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NHS Lanarkshire

Prashant Kumar

NHS Greater Glasgow & Clyde

Introduction & Aims

Ice breaker activities are commonly used in simulation. They are often used without specific consideration for the intended learner group and or the environment.

Ice breakers, although often a simple activity aimed at introducing group members, play a more crucial role in groups that have more complex dynamics, such as inter-professional groups. Deeper consideration of the activity choice, purpose and intended group when using ice breakers in more complex learner environments is essential for them to offer the desired effect and protect psychological safety.

This workshop will encourage simulation based educators to consider the potential benefits and challenges of activities and what they offer to the learner group and the facilitators prior to beginning more complex, inter-professional simulation events.

Intended Learning Outcomes

1. Consider the role, benefits and challenges of ice breakers in inter-professional simulation environments.
2. Explore different types of activities and consider which are aligned to inter-professional/complex groups, more readily.
3. Develop confidence in using ice breaker activities effectively.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

We will offer short presentations, small group activities and facilitated small and large group discussions. At all times the authors will guide the participants to consider the added complexity of utilising ice breakers in the inter-professional learning group.

We will explore attendees past experiences to guide initial discussion.

Small group activities will demonstrate commonly used ice breakers and highlight the potential scope of their use. Active participation will encourage interaction and discussion between the participants, with the aim of stimulating thoughts and ideas.

The authors will share their own personal experiences of using ice breaker activities in inter-professional settings.

Large group discussion will draw the session to conclusion, supporting attendees to consider how they can translate the learning into their own working practise.

Educational methods: Interaction and Group Dynamics

Seminar style format with author presentations and small group breakout sessions. These will be interspersed with facilitated discussion between the small groups and larger group debate.

Expected impact

We expect that the combination of our own, and our attendees prior experiences of using ice breakers and participating in activities will allow open discussion which will in turn encourage a more varied and considered approach to using ice breaker activities in complex SBE environments in future. In doing so, we hope they will be able to utilise ice breakers to enhance SBE experiences for both learner and facilitator, whilst ensuring psychological safety.

Target audience

We anticipate the workshop will be of interest to all healthcare professionals who regularly partake in the facilitation of inter-professional simulation or any inter-professional learning.

Level: introductory/ intermediate/ advanced

Intermediate/Advanced

Maximum number of participants

25

Keywords

Inter-professional, simulation, ice-breaker

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Flipchart

Projector

Pens/paper



SOCIETY FOR
SIMULATION IN EUROPE

How to design a cost effective virtual reality scenario: Pitfalls and possibilities

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Professor Debra Kiegaldie

Holmesglen Institute

Melissa Ciardulli

Holmesglen Institute

Introduction & Aims

With the development of simulation technologies, virtual reality (VR) is emerging as a scalable option to create an immersive learning environment for increased numbers of healthcare students. Virtual reality is the use of computer technology to create an interactive three dimensional environment in which users have a sense of spatial presence. VR has many advantages but is often not considered due to cost, lack of evidence on its educational efficacy, lack of expertise in scenario design and a reluctance to allocate resources for development.

This workshop will provide participants with an opportunity to design, a cost-effective VR scenario using an 8 step methodological framework.

Intended Learning Outcomes

By the end of the workshop participants will be able to:

- Define the different applications of VR technology
- Discuss the barriers and enablers for the use of VR in healthcare education
- Identify resource requirements (technological and human)
- Apply an 8 Step methodology for VR design
 1. Scenario selection
 2. Scenario planning
 3. Scenario design, storyboarding and review
 4. Scenario charting
 5. Teacher walkthrough
 6. Full rehearsal
 7. Filming and editing
 8. Implementation

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- Overview of key concepts (content delivery)
- Brainstorming activity on barriers and enablers of VR including strategies to overcome: what works / what to avoid
- Group discussion on resource requirements
- Small group work on VR design

Educational methods: Interaction and Group Dynamics

The workshop will use interactive small group methodologies such as discussions, brainstorm activities, paired exercises, and small group practical 'hands on' activities such as video analysis to develop participants' knowledge and skills in creating a VR scenario. In addition, a comprehensive workbook outlining the workshop materials, resources and exercises will be provided.

Expected impact

Participants will have the opportunity to produce a VR scenario and script using a known methodology

Target audience

Education planners and teachers

Level: introductory/ intermediate/ advanced

Introductory to advanced (all levels)

Maximum number of participants

Up to 40

Keywords

Virtual reality, Scenario design, Simulation technology

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Data Projector

Tables in clusters for group learning

Flip charts



SOCIETY FOR
SIMULATION IN EUROPE

How to train simulated patients; different working formats

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Annelies Lovink	University of Twente
Ellemieke Rasenberg	Radboudumc
Evelien Plattel	Radboudumc
Sandy Neslissen	Maastricht University
Ivan Bank	Sanquin

Introduction & Aims

Communication training with simulated patients (SPs) is widely accepted as a valuable and effective means of teaching communication skills. SPs are lay people or actors trained to portray a patient with a specific condition in a realistic way. Most medical schools include SP programs in their curriculum to create an effective learning environment [1]. Different learning objectives within the curriculum require different approaches, also in the way SPs are involved. This means that SPs have to be trained in various ways. In this workshop we will collect, share and demonstrate several SP training formats, all related to different learning objectives.

1) Cleland J, Abe K, Rethans J. The use of simulated patients in medical education: AMEE Guide No 42 1. Med Teach. 2009;44:477–86.

Intended Learning Outcomes

Learning objectives:

After this session, participants will be able to:

1. Define several ways to train SP for different educational purposes.
2. Argue when a specific SP training format is an added value for a SP training program.
3. Implement a new SP training format in a SP training program.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This session will highlight different SP training formats in order to reach different learning objectives. This interactive workshop will include small group discussions and role-play sessions, allowing participants to experience different training techniques.

-Introduction (10 min): Short didactic lecture about simulated patients, learning objectives, SP related working formats and SP training techniques.

-Small group discussion (10): In small groups the participants share formats they know or use to train simulated patients

-Plenary sharing results from the small group discussion (10 min)

-Plenary demonstration of three training formats (50 min): We will show aspects of a SP role-play training, a SP feedback training and a SP general acting skills training. Participants are invited to participate as simulated patients.

-Wrap up and evaluation (10 min)

Educational methods: Interaction and Group Dynamics

We will employ a blended learning approach to include a didactic lecture, group discussion and role-play. Participants are invited to actively join the conversations and role-play sessions.

Expected impact

This workshop will enable participants to work with new SP training formats. Every participant shares one intention how to integrate a new SP training format. We will collect these intentions and within six weeks the participants will receive an email with the presentation and take home messages of this session.

Target audience

Everyone who works with SPs or who is interested in working with SPs.
Faculty involved in communication skills training

Level: introductory/ intermediate/ advanced

intermediate

Maximum number of participants

30

Keywords

Simulated Patients

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

- Enough space for the participants to walk around.
- Presentation screen (projector)
- flipchart



SOCIETY FOR
SIMULATION IN EUROPE

How to use LEGO and blueprints to train, develop, improve, and assess workflow in healthcare. Let's explore Tabletop simulation as method.

Format: Workshop

Topic: Patient Safety and Quality Improvement

Authors

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Department for Human Ressource and Education, Capital Region of Denmark

Anne-Mette Helsø

Department for Human Ressource and Education, Capital Region of Denmark

Introduction & Aims

Tabletop simulation has increasingly been used in medical education to train clinicians' workflow in ex. Emergency department. Here the participants are given a unique insight into interdisciplinary teamwork and optimization of patient flow using game-based learning. It is already part of official specialty training in Denmark. Tabletop simulation has also been used to train clinicians in new workflows when moving into new Hospitals sites. Furthermore, tabletop simulation has lately been used as tool for organizational development, particularly when hospital departments are moving into new buildings where equipment and workflow can stimulate organizational change or improve already existing work areas. Moreover, tabletop simulation can be used to analyze workflow ex after adverse events. But what does it take to make at tabletop simulation, in which areas can tabletop simulation also be used as tool and how can tabletop simulation be facilitated in a constructive way with good judgement?

The aim of this workshop is to share knowledge and explore how tabletop simulation can be used to enhance patient safety when used for organizational development and quality improvement and share tips and tricks regarding facilitation.

Intended Learning Outcomes

To inspire participants to use tabletop simulation for organizational development, patient safety initiatives and quality improvement

To provide a facilitator toolbox to run a tabletop simulation to enhance organizational development

To discuss barriers and facilitators in using tabletop simulation for organizational development, patient safety and quality improvement

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

90 minutes in all

30 minutes Introduction to tabletop simulation as method

30 minutes Tabletop simulation

30 minutes Discussion and summing up

Educational methods: Interaction and Group Dynamics

The participants will be actively engaged as participants in a tabletop simulation facilitated by the workshop authors. They will discuss and reflect on the experience

Expected impact

Increased knowledge on tabletop simulation as method to train, develop, improve, and analyze workflow.
Inspiration to use tabletop simulation in own organization

Target audience

Persons working with Quality improvement, organizational change, patient safety, clinicians, non-clinicians

Level: introductory/ intermediate/ advanced

All levels

Maximum number of participants

30 participants

Keywords

Tabletop simulation, Quality improvement, organizational change, patient safety, facilitation

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Tables, chairs, large whiteboards x 2, powerpoint presentation, flip over x 2 ,



SOCIETY FOR
SIMULATION IN EUROPE

How to use cognitive interviewing techniques for debriefing and research

Format: Workshop

Topic: Debriefing

Authors

Laura G. Militello

Applied Decision Science, LLC

Michael Andraea

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David M. Gaba

Stanford University Medical Center

Amanda Burden

Rowan University

Matthew B. Weinger

Hospital Virtual Valdecilla

Introduction & Aims

Post-simulation debriefings often try to unpack the experiences and thinking processes of participants to enhance learning. However, recounting one's own thinking, particularly in high-stakes, time-pressured environments is neither straightforward nor reliable. Based on Cognitive Task Analysis methods, [1-2] "Cognitive Interview" techniques have long been used in cognitive psychology across a variety of complex dynamic decision making settings to delineate participants' thought processes. These techniques facilitate reflection, articulation, and mutual understanding. Thus, cognitive interviewing may be valuable for experiential learning because reflection and self-explaining are useful pedagogical tools to help learners to articulate their mental models [3-4] and refine their decision processes. By making such mental models explicit, learners often discover flaws in their own thinking or alternative pathways or processes to consider. Mentors and debriefers also obtain insight into learners' decision making and action. The aim of this workshop is to provide hands-on experience in using Cognitive Interviewing techniques in the context of medical simulation.

Intended Learning Outcomes

Participants will be able to:

1. Differentiate between traditional debriefs and cognitive interviews;
2. Discuss the utility, strengths, and limitations of cognitive interviewing; and
3. Integrate cognitive interviewing techniques into their own post-simulation debriefs.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This interactive workshop will be led by a cognitive engineer with deep experience in cognitive task analysis. A team of anesthesiologists with experience in medical simulation training and research will share their experiences and perspectives on cognitive interviewing. The workshop will begin with an introduction to cognitive interviews, including a case study illustrating the use of cognitive interviewing for post-crisis simulation debriefings in a study of anesthesiologist decision making. Facilitators will conduct a live interview demonstration using a volunteer from the audience. Following the demonstration, participants will break into small groups and apply the interview technique with anesthesiologists about a simulated incident. Facilitators will lead an interactive discussion of practical considerations for conducting

cognitive interviews, including strengths, limitations, and common pitfalls.

Educational methods: Interaction and Group Dynamics

This session will include a combination of lecture, live demonstration, and small-group practice.

Expected impact

We anticipate that this workshop will provide participants an appreciation for cognitive interviewing, prepare them to adapt the methods for their own use, and point them toward additional resources for more in-depth study.

Target audience

Faculty who lead immersive simulation sessions and debriefings and those who conduct simulation research

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

20

Keywords

Cognitive interviewing, post-simulation debriefing, cognitive task analysis, clinical specialty NA

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

projector or large monitor to display slides, white board, tables configured for small groups of 3-4 people.

Download: [Download figure/table](#)



SOCIETY FOR
SIMULATION IN EUROPE

Integrating Clinical Reasoning into Physical Exam Practice

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Mary Rubino MD

Eastern Virginia Medical School

Mary Lorraine Lyman

Eastern Virginia Medical School

Introduction & Aims

Participation in clinical clerkships requires the ability to integrate clinical reasoning during patient encounters in real time in order to complete hypothesis-driven data collection to inform a differential diagnosis and plan. At the authors' institution, pre-clerkship students learn detailed organ system physical examination skills in the context of that organ system. They may have little practice with these skills in the clinical environment until they reach their clerkship experiences. Pressures in the clinical teaching environment (e.g. student-faculty ratio) can limit the amount of time a preceptor can observe a student's physical exam skills, provide feedback and allow for refinement.

Physical examination teaching associates (PETAs) are simulated patients who are trained to teach and assess the physical exam using their own bodies. PETAs are also trained in facilitation techniques, allowing them to lead physical examination teaching sessions. The authors developed a PETA session utilizing clinical case vignettes to allow students to practice selecting and performing relevant maneuvers in two types of formative sessions: individual, self-directed and structured small group - and develop a differential diagnosis with facilitation from the PETA. Students perform their proposed physical exam with hands-on refinement from the PETA and are then provided with case explanations from the PETA. Explanations include teaching points developed by faculty physicians about the differential diagnosis and rationale used to come to the top differential.

Intended Learning Outcomes

1. Describe a process PETAs can use to facilitate learner clinical reasoning
2. Identify components in a video example
3. Participate in a PETA-Learner interaction
4. Brainstorm potential applications at participant's institution

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

10 minutes - Introduction of activity

10 minutes - View video excerpt from individual and small group sessions; questions/discussion

10 minutes - Participate in mini case training

15 minutes - Break out into small groups/pairs for hands-on practice

15 minutes - Discussion/questions, brainstorming future applications

Educational methods: Interaction and Group Dynamics

Video review with discussion/narration
Interactive discussion and demonstration
Participation in described activity
Reflection on future applications

Expected impact

Participants will identify skills necessary to develop and implement a similar session at their institution

Target audience

Medical educators, PETA trainers and simulated patient (SP) educators

Level: introductory/ intermediate/ advanced

Intermediate

Maximum number of participants

25

Keywords

Clinical reasoning, physical examination teaching associate (PETA), facilitation

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Small tables with room to move around, flip charts (5-6?) and markers (or one flip chart pad with sticky backing), speakers for video sound



SOCIETY FOR
SIMULATION IN EUROPE

Interprofessional Simulation Scenario writing workshop

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Clare Hawket	HEIW
Suman Mitra	HEIW
Sara Catrin Cook	HEIW
Cristina Diaz Navarro	HEIW

Introduction & Aims

Designing an effective simulation scenario is fundamental to the delivery of high-quality simulation-based education and requires appropriate planning including consideration of the prospective learners and the intended learning objectives and outcomes. Additionally, knowledge of educational principles, and best practices in both simulation and clinical practice is needed 1. Scenario design must also consider the modality and fidelity of the simulation, faculty members, use of supplementary resources, moulage, other participants, simulators, and/or standardised patients 2. These findings from a review of the literature informed the development of a national scenario writing template for Wales. The development of this template was prompted by requests from the Welsh simulation community for a standardised approach to scripting during a number of national educational and engagement events. It was produced in collaboration with multiprofessional experts, peer reviewed and tested by the Welsh simulation community.

The aim of this workshop will be to prepare delegates for scenario writing with an emphasis on the development of interprofessional simulation scenarios using a standardised simulation scenario writing template.

Intended Learning Outcomes

- To practise scripting an interprofessional simulation scenario using a preset template
- To reflect on the experience of developing an interprofessional simulation scenario
- To discuss the benefits and challenges of each scripting phase/component

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Delegates will be first given an overview of the workshop, learning outcomes and expectations. They will be introduced to the simulation scenario writing template to be utilised. Following this, some tips on writing successful interprofessional scenarios will be provided. Delegates will be divided into interprofessional groups and have the opportunity to write a scenario of their own choice or alternatively a scenario brief will be offered. Time will be allocated for writing a simulation scenario with experts at hand to support and facilitate this activity. A debrief will occur at the end of the session.

Educational methods: Interaction and Group Dynamics

The workshop will adopt an experiential learning approach³ allowing hands on practice of simulation scenario writing whilst encouraging reflection.

Expected impact

Enhancing the approach to interprofessional simulation scenario writing internationally.

Target audience

All healthcare professionals and simulation technicians and support roles.

Level: introductory/ intermediate/ advanced

This is an introductory/intermediate level workshop aimed at delegates who are new or wish to improve their scenario writing skills.

Maximum number of participants

25-30 delegates

Keywords

simulation scenarios, scenario writing, interprofessional

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

AV resources (computer, screen) and a room which will enable small group work and discussion. Flipchart or SMART screen and the facility to photocopy the pre-set template will be required.



SOCIETY FOR
SIMULATION IN EUROPE

Interprofessional in-situ simulation training within your department; how to make it work and avoid pitfalls

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Prashant Kumar	NHS Greater Glasgow & Clyde
Claire Stark	NHS Greater Glasgow & Clyde
Kathryn Sharp	NHS Greater Glasgow & Clyde
Kathleen Collins	NHS Lanarkshire
Catherine Paton	NHS Lanarkshire
Neil McGowan	NHS Greater Glasgow & Clyde

Introduction & Aims

In-situ simulation is becoming ever more popular in healthcare settings. However, performing in-situ simulation is fraught with danger, especially when trying to build psychologically safe interprofessional working practices within clinical departments. Such problems are exacerbated by issues such as chronic funding shortages, resource limitations and embedded cultural norms. In this interactive workshop we will explore such barriers and offer solutions to overcome challenges for attendees looking to start, develop, sustain, or improve their own in-situ simulation services whilst maintaining the psychological safety of their interprofessional teams.

Intended Learning Outcomes

1. Define 'in-situ' simulation and explore its potential utility in the clinical workplace
2. Describe the components required for delivering effective interprofessional in-situ simulation programmes
3. Explore the barriers and challenges to implementing sustainable interprofessional in-situ simulation programmes & consider potential solutions
4. Consider methods to ensure maintenance of psychological safety of interprofessional teams

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This session will be run in a seminar-style format with a mixture of presentations, small-group work and facilitated discussion. We will explore in-situ simulation from the perspective of developing interprofessional team-working practices in clinical departments. We will look to explore attendees' interpretation and understanding of 'in-situ' simulation, ask what they are trying to achieve by running in-situ simulation, and clarify differences between simulation for education purposes and simulation for systems integration, diagnostics and therapeutics.

Faculty will facilitate break-out sessions in which attendees will work together to explore overcoming cultural, psychological, and resource barriers to implementing sustainable interprofessional in-situ simulation practices. Groups will be asked to present their findings back to the workshop and facilitated discussion between the groups will occur at this point. We will be looking to harness attendees' own experiences of in-situ simulation to add richness to our

discussions. The aim of this exercise is to determine and share appropriate strategies to overcome such barriers and challenges, thus ensuring that in-situ simulation is conducted in a psychologically safe manner. The session will close with a round-up of the main points of discussion and take-home messages.

Educational methods: Interaction and Group Dynamics

Parts of the workshop will be delivered in a seminar-style format, with small-group breakout sessions interspersed with facilitated debate between different groups.

Expected impact

We expect the sharing and harnessing of our own, as well as our attendees' prior experiences of in-situ simulation for developing interprofessional teamwork will lead to an illuminating discussion regarding this pertinent topic. We hope that attendees will be able to harness the discussion points to improve their own in-situ programmes, ensuring psychological safety of their interprofessional teams.

Target audience

We anticipate this workshop will be of interest to simulation-based educators looking to start, develop or improve their own interprofessional in-situ simulation programmes within their own healthcare settings.

Level: introductory/ intermediate/ advanced

All welcome. Prior experience of in-situ simulation, either as participant or faculty would be beneficial.

Maximum number of participants

30

Keywords

in-situ simulation, Interprofessional simulation, team-working

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Flip charts + marker pens

Projector to show slides and short videos on screen



SOCIETY FOR
SIMULATION IN EUROPE

Knowing when to teach, coach, or debrief: A roadmap for implementing “With Good Judgment” across the SimZones

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Jenny W. Rudolph

Massachusetts General Hospital-Institute for Health Professions

Demian Szyld

Boston University Medical Center

Clement Buleon

Caen Normandy University Hospital

Gabriel Reedy

Kings College London

Christian Balmer

Hôpital du Valais

Ignacio Del Moral

Marquis de Valdecilla Hospital

Sasa Sopka

University Hospital Aachen

Introduction & Aims

Building on the insights from a paper forthcoming in *Advances in simulation*, this workshop helps simulationists tailor their facilitation style to learners' needs, using teaching, coaching, or debriefing. Since simulation-based learning occurs in multiple contexts, one teaching style cannot adequately address the needs at each learning level. For example, reflective debriefing, often used following a complex simulation case, is not what is needed when learning new skills. When to use which facilitation style is a question that educators often overlook or struggle to determine. SimZones is a framework that clarifies the multiple contexts in simulation. SimZones combined with elements of Debriefing with Good Judgment, can help educators match the appropriate facilitation style with learner needs and learning context. We have distilled the core elements of the “With Good Judgment” approach to debriefing, and applied them to the SimZones framework to guide educators with 1) what type of learning can be expected with each learning context, 2) what behaviors and activities can be expected of the learners in each learning context, 3) what instructional strategies are most effectively used at each stage, and 4) what are the implications for the teacher-learner relationship.

Using the lens of social constructivist learning that describes a dynamic and developmental relationship between learner and context, we see SimZones as the staged contexts in which teaching and learning is experienced. Within the zones, the “With Good Judgment” approach provides a developmental context via its nurturing emphasis on curiosity and respect for the learner as well as clarity about the standards to be met.

SimZones, introduced by Roussin and Weinstock provides an instructional framework to map and facilitate the learning progression from novice to competent practitioner. They describe simulation Zones 0-4. Zone 0 includes facilitator-free instruction with automated devices or computerized programs that give feedback. Zone 1 is the context in which foundational skills are taught whether they be psychomotor, communication, or teaming skills. In Zone 2, learners practice recently acquired skills in important situational contexts. Zone 3 involves simulation for the ongoing development of individuals, teams, and systems. Zone 4 is real-world practice.

With Good Judgment approach: The with good judgment approach uses a constellation of internal commitments: assuming the best of the learner—“holding them in high regard,” holding the learner to high standards; being curious about goals and perspectives of the learner. The With Good Judgment Approach also uses a constellation of external behaviors such as: “Being transparent” about what one is thinking by previewing conversational goals, sharing one’s point of view; demonstrating curiosity by asking open-ended questions.

Intended Learning Outcomes

1. Contrast differences across the SimZones when teaching, coaching, and debriefing with good judgment.
 - What is the stance of the Learning Leader in each SimZone?
 - What type of learning should I expect in each SimZone?
 - What behaviors and activities should I expect of the learners in each SimZone?
 - What instructional strategies should the Learning Leader use in each SimZone?
2. Demonstrate key instructional strategies for teaching, coaching, and debriefing with good judgment;
3. Apply the SimZones With Good Judgment approach to an example of the participant’s own simulation based education context.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

The time will be equally divided among the first five activities. The sixth activity will be five minutes.

The end goal of this session to allow participants to analyze and map their own teaching, coaching, and debriefing contexts using the lens of SimZones with Good Judgment (SZWGJ). To that end, the workshop will follow the SimZones With Good Judgment format itself so that learners can experience the process as well as learn and apply the content.

1) Introduce SimZones and guide participants to identify current or new objectives they might have in each SimZone within their existing or planned programs. This is SimZone 1 activity.

a. A didactic presentation to introduce simZones;

b. Solo reading time: A descriptive handout with a table of examples and details of how SZWGJ is applied generically.

2) Mentored session at tables. Using a worksheet based on the table of examples of how to apply SZWGJ. This is a SimZone2 activity. Participants will:

a. Work solo to map an example from their own work into the cells of the table;

b. Pair and share 2 key cells from their table with a partner;

c. Faculty will listen and coach individuals and pairs at the table

3) Introduce key instructional strategies for each SimZone, with a focus on “internal commitments” and key conversational moves that incorporate principles of the With Good Judgment approach across each zone.

a. A didactic presentation to introduce internal commitments and opening lines

b. Solo reading time: A descriptive handout a short narrative of how With Good Judgment plays out internally for an educator and what are the external “opening lines” they might use. This is SimZone 1 activity.

4) Mentored session at tables. Using a worksheet based on the didactic and narrative handout, participants will mentally rehearse and script the internal commitments and external conversational strategies they might use for their example program. This is a SimZone2 activity. Participants will:

a. Work solo to capture the most challenging aspects of their internal commitments to the learners and consider how to “reset” themselves when they are triggered in ways that make those commitments difficult to meet.

b. Work solo to script some opening lines for a part of their SZWGJ example.

c. Pair and share internal commitment challenges; pair and share an “opening line”

5) Open whole-class discussion of the insights and challenges from this work. In this SimZone3 activity, faculty and participants will have a chance to learn about how this work “landed” on participants and their current thoughts and feelings about it. This is a SimZone 3 activity.

6) Mentored session at tables. Take-aways and application.

a. Small group discussion at tables about how and whether to apply insights or deal with challenges when participants return to their native work environments.

Educational methods: Interaction and Group Dynamics

This workshop uses the methods of with good judgment across the SimZones to teach, coach and debrief the content of the workshop. Put differently, the workshop utilizes the methods we are explicated to facilitate the workshop. Workshop facilitators seek to model the philosophical foundation of holding the learner to high standards while holding them in high regard; the practice of the Learning Leader being transparent in their thinking and communication; and the method of adapting conversational strategies to optimize the learning across the developmental pathway of a clinical learner. In this workshop, we will be adjusting when we teach, coach, and inquire to meet the learner where they are reduces troublesome ambiguity from the teacher-learner relationship. We hope to structure the activities such that the participants will experience knowing what is expected and owed to each other in each zone.

Expected impact

It is the faculty's experience that allowing simulation educators to soak up and apply the SimZones framework is both a revelation and highly intuitive. We expect that people will experience this as an "aha!" that allows them to better organize and conduct their simulation-based learning sessions.

Applying the "With Good Judgment" approach in the context of teaching and coaching (not just debriefing) is also a revelation for participants. They generally feel much more empowered when they are clear about how to use and customize conversational techniques such as previewing, advocacy, and inquiry.

Target audience

Simulationists responsible for designing or carrying out simulation programs in situ, in centers, for readiness, for assessment. Sim Center managers or leaders who want a framework to to organize their center. Medical School, Nursing School or other Health Professions professors, deans or directors who would like a framework for organizing their work.

Level: introductory/ intermediate/ advanced

Intermediate and advanced practitioners will probably get the most out of this session, but beginners are welcome!

Maximum number of participants

100

Keywords

Curriculum design; teaching methods, facilitation, debriefing

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Ability to project slides

Tables for small group work

Ability to play videos and sound

Download: [Download figure/table](#)



SOCIETY FOR
SIMULATION IN EUROPE

Let's act!: Adapting Forum Theatre as an effective simulation framework for teaching

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Paula Houton	Queen's University Belfast
Paul Murphy	Queen's University Belfast
Linda Ni Chianain	Queen's University Belfast
Gerard Gormley	Queen's University Belfast

Introduction & Aims

Fancy a trip to the theatre? Are you interested in learning more about using a Forum Theatre-based simulation framework in your teaching?

This workshop will give you an overview of Forum Theatre (FT) and the opportunity to experience a FT simulation in action. The methodology of FT, as an element of Theatre of the Oppressed (TO), was founded by Augusto Boal, a theatre director, theorist and activist. FT can be adapted from its original purpose as an arts-based intervention method to function as a simulation-based education method that has great potential for more effectively preparing healthcare students and professionals for a wide range of complex, high risk, high stress assessment and planning processes across health and social care.[1] FT offers several potential advantages over traditional interprofessional simulation teaching approaches which we will discuss further in this workshop.

Intended Learning Outcomes

Participants will be able to:

1. Describe the basics about FT:
 - a. An overview of its historical roots
 - b. The format of a FT piece
2. They will have some understanding of how to transform a clinical scenario into a FT play which can be used as a simulation teaching framework
3. Describe what it is like to be involved in a FT play
4. Identify further reading materials they can use to learn more about FT

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- General introductions, 'ground rules' and overview of session
- Introduction to FT including some basics about the history and format of the approach
- We will give a brief overview of our experience using this teaching approach
- The workshop facilitators will act out a clinical scenario using a FT format
- This will be followed by audience discussions led by the 'Joker'/facilitator

- Delegates will then be encouraged to actively participate in the play, taking on the role of spect-actors
- The 'Joker'/facilitator will conclude the session with a question and answer style discussion, recapping key learning points

Educational methods: Interaction and Group Dynamics

A range of educational techniques will be used in this session including:

- The opportunity to watch and engage in a FT play
- Facilitated small group discussions

Expected impact

The intended impact of this workshop is to introduce participants to the basics of using a FT teaching approach. Moreover, to encourage participants to consider using this format in the future.

Target audience

Health profession researchers and educators who are interested in experimenting with a novel simulation approach.

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

12

Keywords

simulation frameworks; healthcare training; team training; forum theatre

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Laptop, data projector, audio, flip chart and pens.

References:

1. Mcgrath, D., Gormley, G. J., Reid, H. and Murphy, P. (2022) 'From 'spectating' to 'spect-acting': medical students' lived experiences of online Forum Theatre training in consulting with domestic abuse victims', *Advances in Simulation*, 7(1).



SOCIETY FOR
SIMULATION IN EUROPE

Lights, Camera, Action! Increasing Simulation Realism by Becoming a Hollywood Director

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Lance Baily

HealthySimulation.com

Introduction & Aims

You're the Star! Learn from a clinical simulation champion who worked on big Hollywood movie sets with this hands on workshop to get you "behind the scenes" and directing your first "big picture"! This workshop will introduce the basic fundamentals of storyboarding, digital cinematography, lighting, and basic audio recording. Use these basic video production techniques to create Sim Lab orientations, promotional videos or training tutorials. Lance shares over twenty years of video production experience, ranging from documentary cinematography to editing pilot shows with Tom Hanks. Learn Lance's hard-earned production secrets through hands-on exercises, with prizes for the best production team!

Intended Learning Outcomes

1. Compare healthcare simulation scenario design with audio video production strategies.
2. Analyze Hollywood film clips to understand story telling opportunities for clinical simulation.
3. Learn and practice Hollywood production techniques to quickly convey meaning to simulation learner audiences.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

You're the Star! Learn from a clinical simulation champion who worked on big Hollywood movie sets with this hands on workshop to get you "behind the scenes" and directing your first "big picture"! This workshop will introduce the basic fundamentals of storyboarding, digital cinematography, lighting, and basic audio recording. Use these basic video production techniques to create Sim Lab orientations, promotional videos or training tutorials. Lance shares over twenty years of video production experience, ranging from documentary cinematography to editing pilot shows with Tom Hanks. Learn Lance's hard-earned production secrets through hands-on exercises, with prizes for the best production team!

Part 1 (45 Minutes): Lecture with slides and film videos

Part 2 (20 Minutes): Work in Groups Using Cameras to Tell Short Stories

Part 3 (20 Minutes): Review Group Work

Part 4 (5 Mins): Award Prize to Winner

Educational methods: Interaction and Group Dynamics

After lecture with video demonstrations, participants will work in groups of 6 to record their own short story. All videos will be reviewed as a collective group and the best team will win.

Expected impact

Demonstrate to clinical simulationists the importance of scene and patient development to improve believability in simulation realism, increasing outcomes for learners who are better "bought in".

Target audience

Individuals responsible for setting up clinical simulation scenario activities.

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

36 (6 per group)

Keywords

realism, clinical simulation, healthcare simulation, medical simulation, video, storytelling, scenario design, staging, operations, realistic,

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

I need a computer to display a powerpoint presentation and video files.

I CAN BRING THESE DEVICES WITH ME IF YOU PREFER: I need 6 GoPro cameras which can be connected to that presentation laptop so we can drag a video file onto the desktop to watch group work from the 6 GoPros. Note: They don't have to be GoPros brand specifically, but they have to be able to quickly drag and drop .MP4 (MPEG 4) files from the camera to the desktop so we can watch them instantly!



SOCIETY FOR
SIMULATION IN EUROPE

Magic's in the makeup

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Liv Norland

SAFER

Eli Kydland

SAFER

Introduction & Aims

Realism is an important part of simulation training. This is often ignored in courses and simulation. Studies shows that use of moulage can increase realism in scenarios, and furthermore affect the learning outcome and motivation for simulation. Realism can be understood as i.e. psychological fidelity, reproduction of real-world reactions, interactions and responses.

In our experience, use of moulage has a positive effect on the engagement and authenticity in simulation training. Especially for the participants, but also for facilitators and standardized patients. It motivates the participants to act their role in the simulation and increases the realism. "Train as you fight" is an important part of the training. There is no clear evidence that moulage impacts higher performance, but studies show that it increases the engagement and positive attitude to perform simulation with more realistic surroundings.

When using moulage for simulation, it is essential that it is of high standards, otherwise poor-quality moulage can have the opposite effect and reduce credibility.

Intended Learning Outcomes

1. Increase realism and engagement in simulation-based learning.
2. To efficiently be able to create simple to advanced wounds and injuries for simulation.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- Divide the participants into 4. A maximum of 6 participants in each group.
- Interactive workshop with demonstration of use of moulage, and practical training for the participants.
- The participants will learn to create i.e bruises, burns and bleeding wounds.
- Q&A

Educational methods: Interaction and Group Dynamics

Use of moulage as a pedagogical tool, using demonstrations and active learning.

Expected impact

Increase realism and engagement in simulation-based learning.

Target audience

Facilitators and instructors interested in use of moulage

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

24

Keywords

Moulage, Simulation, Realism

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Classroom for four groups (4 tables, 30 chair)

Projector with HDMI cable

Pen and paper for taking notes for the participants.

All other equipment will be provided by the authors.



SOCIETY FOR
SIMULATION IN EUROPE

Managing challenge level in simulation: ensuring safety without inducing sleep

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Dr Neil Colquhoun	NHS Tayside/University of Dundee
Dr Susan Somerville	University of Dundee
Dr Neil Harrison	University of Dundee
Dr Steven Lewis	University of Dundee

Introduction & Aims

A fundamental aspect of simulation design is ensuring that simulation activities are set at an appropriate challenge level for the intended learners, however, this may be contentious to define? Should we err on the side of caution & propose a lesser challenge to ensure psychological safety?, if so, how does this affect our learners' experiences? A degree of challenge in all education is needed (Guadagnoli et al. 2012) and simulation is no different, however, the appropriate level of educational challenge should be balanced against the potential for learners to feel unsafe due to expectations that are beyond their current level of knowledge and skill (Monteiro & Sibbald, 2020; Rudolph et al. 2014).

In adopting the principles of constructive alignment (Biggs & Tang, 2011) we aim to ensure that intended learning outcomes, and in turn learning experiences, are aligned with our learner's educational or professional journey. Although this may appear to encourage a standardised approach, in reality there is the potential for variation in how educators interpret and apply this. Vygotsky's (1934) 'zone of proximal development' is a very helpful concept and has multiple factors and variables playing into its application. However, there is a subtle balance for educators to facilitate in the moment; when to challenge when to step back, and so , do we fear impacting on psychological safety through challenge to the point of boring our learners to sleep in simulation? What are the things that simulation faculty can do to manage the dynamic balancing act (Kolbe et al, 2020) of psychological safety as well as creating sufficient educational challenge?

In this workshop the presenters will outline their observations and work in the area of the pre-brief and psychological safety. It is proposed that challenge level can and should be approached more courageously and that there are ways to ensure this does not impact on a learner's safety.

Intended Learning Outcomes

In this workshop we aim to:

- Discuss the participants experiences and practice of setting challenge level and constructing Intended Learning Outcomes for simulation.
- Explore the potential impact of challenge on simulation experiences for learners and psychological safety.
- Explore current practice in balancing challenge and safety when facilitating simulations.
- Develop a consensus for best practice in ensuring psychological safety through the pre-brief to allow a more courageous yet appropriate approach to challenge setting for learners during simulation.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- Introduction to the topic and related literature with reference to practice.
- Group work to discuss current practice and thoughts on the issue.
- Presentation of research work and a model of pre-briefing.
- Discussion of this proposal to develop consensus and applications to practice.

Educational methods: Interaction and Group Dynamics

Small group discussion and desk-based activities around tables with chairs

Expected impact

Quality enhancement in simulation design and delivery.

Target audience

Any healthcare simulation facilitators

Level: introductory/ intermediate/ advanced

Any, however this is perhaps most attuned to introductory/intermediate levels.

Maximum number of participants

30-40

Keywords

Any healthcare facilitators and healthcare simulation context

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

PowerPoint, flipchart and pens.



SOCIETY FOR
SIMULATION IN EUROPE

Mastering the meta-debrief

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Prashant Kumar

NHS Greater Glasgow & Clyde

Kathleen Collins

NHS Lanarkshire

Catherine Paton

NHS Lanarkshire

Neil McGowan

NHS Greater Glasgow & Clyde

Introduction & Aims

One of the key components in progressing from a 'growth' to 'maturity' phase as simulation debriefers is developing the ability to coach and support those debriefers who are earlier in their journey. Such 'meta-debriefers' should be able to perform and model high-quality feedback conversations. However currently, the progression from 'debriefers' to 'meta-debriefer' is loosely constructed from opinion and anecdotal experience only, rather than evidence-based practices. By considering both qualitative and quantitative methods, this workshop will help simulation-based educators to structure and reflect upon on their current meta-debrief skills and practices such that together we may better answer the question of 'how do we master the meta-debrief?'

Intended Learning Outcomes

1. Describe a structured approach using both quantitative and qualitative methods for conducting reflective meta-debriefings for less experienced debriefers
2. Consider methods to ensure maintenance of psychological safety during meta-debriefings
3. Explore potential research opportunities for evidencing best practice in 'debriefing the debrief'

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This session will be run in a seminar-style format with a mixture of presentations, role play, small-group work and facilitated discussion. We will explore attendee's prior experiences of meta-debriefing prior to offering a structured approach which can be implemented within their own faculty development programmes. The faculty will use role play as a means to discuss a variety of different methods and tools, both qualitative and quantitative, that can be used by to help simulation educators improve their meta-debriefing sessions. Furthermore, in groups we will critically appraise and evaluate a small selection of the latest literature which may aid simulation educators in this endeavour.

Faculty will also facilitate break-out sessions in which attendees will work together to explore strategies to ensure we create, maintain and are able to re-establish psychological safety with less experienced debriefers. Groups will be asked to present their findings back to the workshop and facilitated discussion between the groups will occur at this point. Finally, we will explore potential research opportunities for evidencing best practice in 'debriefing the debrief' and look to create potential collaborations in this highly dynamic field. The session will close with a round-up of the main points of discussion and take-home messages.

Educational methods: Interaction and Group Dynamics

Parts of the workshop will be delivered in a seminar-style format, with small-group breakout sessions interspersed with facilitated debate between groups. This will include critical appraisal of recent research studying potential additions to the toolkit that faculty can use within their meta-debriefing sessions with less experienced debriefers.

Expected impact

We expect that the amalgamation of both our own, and our attendees' prior experiences of meta-debriefing will lead to an enlightening discussion regarding this important topic. We hope that attendees will be able to harness the discussion points to help structure and improve their meta-debriefing practices within their own simulation settings, whilst ensuring the psychological safety of less experienced debriefers under their mentorship.

Target audience

We anticipate this workshop will be of interest to simulation-based educators looking to begin or improve their meta-debrief skills as part of ongoing faculty development practices within their simulation programmes.

Level: introductory/ intermediate/ advanced

Intermediate and advanced simulation educators looking to begin or improve their meta-debrief skills

Maximum number of participants

30

Keywords

Meta-debrief, debriefing the debriefer, faculty development

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Flip charts + marker pens

Projector to show slides and short videos on screen



SOCIETY FOR
SIMULATION IN EUROPE

Modified-Mastery Learning Lab: Improving our approach to skill acquisition and faculty development (the taster menu)

Format: Workshop

Topic: Surgical and Psychomotor Skills Training

Authors

James Tiernan	NHS Lothian (Edinburgh), Scotland, UK
Nathan Oliver	NHS Lothian (Edinburgh), Scotland, UK
Thalia Monro-Somerville	NHS Lothian (Edinburgh), Scotland, UK
Eleanor Hampton	NHS Lothian (Edinburgh), Scotland, UK
Jonathan Bardgett	NHS Lothian (Edinburgh), Scotland, UK
Callum Mutch	NHS Lothian (Edinburgh), Scotland, UK
Simon Edgar	NHS Lothian (Edinburgh), Scotland, UK

Introduction & Aims

NHS Lothian aspires to excellence in clinical education in order to deliver the highest quality healthcare in Edinburgh and the surrounding regions. Modern postgraduate curricula include a broad range of procedural competencies to be acquired in order to progress through training. We are obliged to provide a risk-free learning environment, using simulation methodology to prepare for, and enhance, real life performance [GMC 2015].

Simulation-Based Mastery Learning (SBML) has a wealth of literature evidencing the positive impact of skills acquired and maintained via this methodology. Such impact has been comprehensively shown, from direct measures in the simulation laboratory, through transference of these new skills into real life procedural performance, to patient outcomes (reducing harm) and collateral effects (healthcare cost savings) [McGaghie et al 2014].

The NHS Lothian Modified-Mastery Pathway has evolved from established SBML methodology by adding components highly-valued by learners, namely extensive online Pre-Learning, Peer-Assisted Deliberate Practice and Peer-Observation of Simulated Performance and Assessment [Scahill et al 2021].

Our methodology and resources have attracted the attention of regional and national postgraduate training programmes [e.g. Internal Medicine Training Scotland (IMT)] with whom we have collaborated since 2019. The Lothian Modified Mastery methodology has formed the learning pathway for all IMT trainees in Scotland to acquire simulation-based competency in lumbar puncture, ascites aspiration, paracentesis, intercostal drainage and central venous cannulation. Over 300 Scottish IMTs have benefitted; their feedback describing the positive impact of this work [Kerins et al 2021].

In addition, the programme is constructively aligned with our inter-disciplinary clinical need, offering Mastery Learning to other clinicians who may be expected to perform procedures e.g. Advanced Nurse Practitioners and Physician's Associates, some of whom already share their expertise as members of our faculty.

The aims of this workshop are to:

- Share our iteration of SBML methodology with new colleagues
- Inspire others to consider how SBML might improve skill acquisition and clinical performance for their own

inter-disciplinary teams

Intended Learning Outcomes

1. Understand the principles and core components of Simulation-Based Mastery Learning (SBML).
2. Recognise the evolution into Modified Mastery Learning, with its potential to enhance learning experiences.
3. Feel prepared to begin designing robust SBML checklists for risk-inherent, complex procedural skills.
4. Consider and improve approaches to assessing and providing feedback for simulated procedural performances.
5. Leave the session inspired to join us for the full, in-person Mastery Learning Lab in Edinburgh, with a view to independent facilitation, development of local programmes and expert faculty.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Welcome, Introductions + Ice-Breaker (whole group activity) - 10mins

- Establishing welcoming, supportive, positive tone

SBML to Lothian Modified Mastery Methodology (interactive presentation) - 15mins

- Principles + Components of SBML
- Evidence base
- NHS Lothian journey – Why / How / What
- Modified Mastery Pathway

Checklist-Creation (small groups – whole group activity) - 25mins

- Principles
- Checklist building - groups to choose a checklist (clinical or otherwise)
- Inter-group presentations + feedback

Mastery Session Facilitation and Feedback (small groups – whole group activity) - 25mins

- Watch part of a video-based performance
- Group assessment and feedback
- Inter-rater discussion

Mastery Programme Development (small groups – whole group activity) - 10mins

- Identification of local team Priority Skills / Learners
- Upscaling – Challenges and potential Solutions
- Evaluation of programme impact

Summary + Take Home Messages - 5mins

- Let's collaborate - Come join us for the full Learning Lab in Edinburgh!

Educational methods: Interaction and Group Dynamics

- Interactive, large-group presentation
- Small group discussions, sharing with wider group (buzz groups)
- Large group facilitated discussions

Expected impact

By sharing our innovative methodology with new colleagues from across Europe and the world, we expect to raise awareness of the potential positive impact of Modified Mastery Learning upon the learning experience and procedural performance of their own teams. We hope that others may wish to collaborate more meaningfully in the future and would welcome them to our immersive, in person, full Mastery Learning Lab events.

Target audience

All those interested in utilising simulation-based skills and faculty development to improve educational experience and real-life clinical outcomes.

Level: introductory/ intermediate/ advanced

All levels of attendee are welcome and we would anticipate that the greatest impact would be for intermediate/advanced learners who can return home to build their own programmes and faculty.

Maximum number of participants

Room capacity

Keywords

Mastery, Skills, Feedback, Faculty

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Large screen for Powerpoint-based slides please.

Round tables for small group work; large post-it-notes; roving microphones please.

Audio-Visual set-up to play pre-recorded video of learner simulation-based performance, for group feedback activity please.

Thank you!



SOCIETY FOR
SIMULATION IN EUROPE

Motivation related to goal setting: co-designing interdisciplinary simulations

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Dr Janine Stockdale

Senior Lecturer: Midwifery

Alison Smart

Lecturer, Nursing

Lorna Lawthor

Lecturer: Midwifery

Dr Billiejoan Rice

Senior Lecturer: Nursing

Introduction & Aims

In 2021, a new inter-professional simulation center opened its doors in a United Kingdom (UK) University. The key purpose of the center is to facilitate inter-professional learning. Uni-professional simulation was already established within the nursing and midwifery curricula, however, neither profession had co-designed or facilitated a nursing and midwifery simulation. The reason for this was multifactorial, including the differences between the philosophy, skills, knowledge, and overall learning goals of the two different professions.

Setting clear and definitive learning goals are essential for enabling learners to experience ongoing motivation to learn [2]. If the learning goals are ambiguous or perceived to be irrelevant either during the scenario or the debrief, students are likely to disengage [3]. The practice of co-designing and implementing interdisciplinary simulation, therefore, challenges educators to map and integrate the multiple and distinct learning goals for each specific profession.

This workshop aims to take educators through a systematic process using a motivational template that enables them to co-design inter-professional simulations; with particular emphasis on mapping and agreeing the uni-professional and inter-professional learning goals.

Through participation, the inter-professional groups will create an active document, that can serve both as a co-design guide and facilitators' tool.

Intended Learning Outcomes

- Understand how learning goals are related to students' motivation to learn
- Map learning goals to different disciplines within a simulation
- Practise integrating learning goals for inter-professional simulation
- Practise using a 'template' as a tool for inter-professional facilitators
- Provide feedback about the co-design guide and how the facilitators' tool can be enhanced.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Introduction to workshop/background and overall aim: 10 mins
Overview of learning goals related to student motivation : 5 mins
Group work: Using the motivational template map the learning goals to different disciplines within a simulation
Challenge of integrating the learning goals for inter-professional simulation
The use of the template as a tool for inter-professional facilitators 40 mins
Summary - Take home Message 5 mins

Educational methods: Interaction and Group Dynamics

Short interactive lecture (provided by facilitators)

Guided instruction
Group work
Problem based learning
Discussion

Expected impact

Educators and healthcare practitioners, who facilitate inter-professional simulation, will increase their knowledge of co-designing inter-professional simulations and practise a systematic process using a motivational template, mapping and agreeing both uni-professional and inter-professional learning goals, ensuring a rich learning experience for all participant professionals.

Target audience

Delegates (healthcare practitioners, educators) who are interested in designing inter-professional simulations using a systematic and shared approach.

Level: introductory/ intermediate/ advanced

Intermediate and advanced level

Maximum number of participants

25

Keywords

education, co-design, inter-professional, simulation

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Appropriate sized Room
Tables and chairs for group work
PC/projector
Flip chart/markers
Post -its
Blank A4 page



SOCIETY FOR
SIMULATION IN EUROPE

New technologies for medical training: a tech guide for healthcare professionals

Format: Workshop

Topic: Technological Innovation and Technical Operations

Authors

Serena Ricci

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University of Genoa

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1. University of Genova 2. IRCCS Giannina Gaslini Institute

Willem van Meurs

Consultant in simulations

Introduction & Aims

This is an introduction of new technologies and how they can be used in healthcare simulation. The workshop will start with an overview of Virtual and Augmented reality (VR/AR), haptic devices, affordable electronics, and currently available devices, both commercially and in the research field. An update on physiologic modeling will also be provided. Demos of applications in medical simulation will be given. A discussion with workshop participants will allow for sharing of experiences. Tentative guidelines for how to choose the best tool for specific educational needs will conclude the workshop.

Intended Learning Outcomes

- Distinguish between different technologies and tools, particularly VR/AR applications and systems, haptic devices and affordable electronics, and physiologic modeling
- Discuss the main features of these technologies and their purpose in healthcare simulation
- Identify the most appropriate technology for the end user and the purpose of the simulation (i.e., paramedics vs. residents, training tools vs. assessment instruments)

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

1. Introduction and basic explanation of technologies, examples of general applications
2. Applications in healthcare training
3. Case study: new technologies in emergency medicine education
4. Moderated discussion to analyze the pros and cons of new technologies for medical education. Optimizing trainee and instructor needs through technical means
5. Experiences, ideas, and projects from the audience
6. Synthesis of guidelines for use of technology in training of healthcare professionals

Educational methods: Interaction and Group Dynamics

Lecture and demos, dialog with the audience, synthesis

Expected impact

(i) facilitate the use new technologies in healthcare training activities; (ii) enable professionals working in simulation centers to critically select or design the most appropriate tool for their needs; (iii) promote a multidisciplinary network of professionals involved in medical simulation (physicians, medical instructors, simulation specialists, engineers, technicians, computer scientists, and VR and AR developers), (iv) come to efficacy studies for the validation and introduction of technological innovations in medical education.

Target audience

Educators, Healthcare providers, Simulation technologists

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

50

Keywords

technology; virtual reality; augmented reality; haptic devices; electronics; physiologic modeling

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Room with a 3 x 3 m empty space, powerstrip, extension cord, projector or screen to share contents



SOCIETY FOR
SIMULATION IN EUROPE

Open Access data sharing - How to make simulation-based training data Findable, Accessible, Interoperable and Reusable?

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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University of Twente

Connie Clare

Research Data Alliance

Zafer Öztürk

University of Twente

Introduction & Aims

Open Access publishing is getting more and more attention. Research is made available to the public and developing countries, giving more exposure. The underlying data, which can be qualitative (i.e. interview data) or quantitative (test scores, time to perform a task, simulator parameters) are however often not shared. Publishing these data improves reproducibility, accelerates innovation and allows for sharing of unique data not available to everyone. We believe this is the next step forward in maturation of the field of simulation applied to medicine and nursing. There are however perceived concerns regarding privacy and access under the EU general data protection regulation (GDPR). At the same time anonymization techniques allow for data sharing and reuse under the GDPR.

So how to publish your simulation-based studies and practices according to the so called FAIR principles, making it Findable, Accessible, Interoperable and Reusable?

The aim of this workshop is to show best practices for publishing simulation-based training data. We use a graduate surgical skills curriculum study previously published as use case.

Context (reading not required before the workshop):

1. Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* 3, 160018. <https://doi.org/10.1038/sdata.2016.18>
2. Halfwerk, F., Groot Jebbink, E., & Groenier, M. (2020). Development and Evaluation of a Proficiency-based and Simulation-based Surgical Skills Training for Technical Medicine Students. *MedEdPublish*, 9(1), [3523]. <https://doi.org/10.15694/mep.2020.000284.1>
3. Halfwerk, F., Groot Jebbink, E., & Groenier, M. (2021): Data underlying the Research on "Development and Evaluation of a Proficiency-based and Simulation-based Surgical Skills Training for Technical Medicine Students". 4TU.ResearchData. Dataset. <https://doi.org/10.4121/14837907.v1>

Acknowledgements: The authors appreciate the icons "group discussion" by AVAM, and "meeting" by Icon Z from Noun Project, thenounproject.com.

Intended Learning Outcomes

After this workshop, participants will be able to:

1. Discuss advantages and limitations of publishing your simulation data
2. Recall the FAIR principles of making data Findable, Accessible, Interoperable and Reusable
3. Address anonymization techniques for personal data sharing of simulation participants or patients, and learn which open or restricted licenses are available for data reuse

4. Apply FAIR principles and review how (well) these were applied on a published simulation-based training dataset from graduate surgical skills training
5. Use the FAIR framework in your own simulation practice and simulation research

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This interactive 90-minute workshop consists of:

1. Introductory lecture with welcome, learning objectives and workshop format. Workshop participants share experience with simulation data publishing (10 min)
2. Lecture with theoretical framework on the FAIR principles (10 min)
3. Introduction of a best-practice case with following small group discussion: applying one of the FAIR principles per group on simulation-based data (25 min)
4. Plenary group presentation and discussion of small group results on applying the FAIR-framework (20 min)
5. Small group discussion: Start planning data sharing for your own practice and studies (15 min)
6. Plenary closure and wrap up: Where can you find support on data sharing? (10 min)

Educational methods: Interaction and Group Dynamics

Faculty presentations on framework, context, and data publishing support

Small group discussions with expert facilitation

Plenary group discussion with small group findings and tips for use in own practice and research

Expected impact

Participants will consider sharing data best-practices when designing and conducting their simulation practices and research studies. Data sharing in simulation applied to medicine and nursing allows for comparison between learner groups, benchmarking data, finding best practices, and potentially norms and standards for specific task trainers and levels of proficiency.

Target audience

All delegates involved in simulation design, simulation practice, simulation evaluation, simulation research.

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

25

Keywords

Simulation practice; simulation research; open access; surgery; non-technical skills; collaboration

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Projector/Beamer and 2 wireless microphones

Room with multiple tables and chairs for small group discussions

Wi-Fi connection for participants and online faculty support

Download: [Download figure/table](#)



SOCIETY FOR
SIMULATION IN EUROPE

Participatory Methodology for Simulated Participant case writing

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

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Royal College of Surgeons in Ireland

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Royal College of Surgeons in Ireland

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Introduction & Aims

Training healthcare professionals (HCPs) to work in today's health service requires authentic learning opportunities to encourage engagement in empathic, sensitive, and appropriate context-dependent skills practice. As we know, simulated participants (SPs) support the acquisition of vital skills through repetitive practice with feedback. Evidence-based practice assumes a narrative-interpretive paradigm, where a patient's experience of illness is singular and context-specific. Utilising narrative in the education of health professionals can benefit clinical practice, learner engagement, and the overall patient experience by increasing the clinician's awareness and appreciation for the impact of healthcare systems on patients' experiences and perceptions. What we learn from stories is very different from other forms of knowledge transfer - it is not simply cognition, but something deeply empathic. However, medical training often forces learners to condense patients' stories and ignore their narrative subtleties in the interest of brevity and efficiency. Using participatory methodology to create educational cases facilitates patient involvement in HCPs training and can give voice, a nuanced insight to lived experiences, and a context rich in authentic patient-specific dialogue. The inclusion of the authentic voices of service users has potential to impact and shape the attitudes of HCPs, drive social accountability, and improve alignment between the health professional workforce and societal needs. Unfortunately, the simulation case scripts for SP's typically neglect authentic patient voices in their design. Our field needs strategies to integrate the complete and diverse range of patient voices and perspectives in order to truly reflect patient-centered learning. We can leverage patient and public involvement (PPI) in the education of HCPs by employing participatory methodology to generate authentic patient-centered learning resources. This approach would expand diversity and inclusion in the curriculum, so that we might better represent our patient population and promote humanism in clinical practice. This workshop aims to provide an innovative approach to patient involvement in experiential learning case development and the shaping of personal stories into sustainable, deliverable, and generalizable learning opportunities.

Intended Learning Outcomes

Recognize the importance of PPI for health professional's education.

Demonstrate participatory methodologies to design simulation scenarios

Discuss Narrative Capture Methodology to write authentic cases.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Session Description and timings

The Pre-brief – 15 mins

Welcome / Introduce faculty with a brief biography

Orientation to the session and introduction to learning objectives

Ground rules and expectations for a psychologically safe learning environment will be agreed.

Extended participant introductions and expectations. Icebreaker activity

Think Pair Share (Small group exercise) - 15 mins

Participants will be asked to reflect and share their experiences of scenario creation in small groups to understand the current state of the art - Who and how we write patient scenarios

How does the patient profile emerge?

Group discussion - 15 mins (moderated by roving faculty).

The group discussions aims to form consensus on key values for scenario design where everyone's opinions are heard and understood, and knowledge is created. Each small group will be asked to elect a spokesperson to share key ideas with the larger group.

Instruction and Practice - 15 mins

A slide presentation covering key concepts including: narrative in HP education, public-patient involvement, participatory design, co-creation.

Case studies presentation - 15 mins

Experience from case studies at RCSI using participatory methodology for scenario design.

If/then implementation intentions - a design task small group exercise - 15 mins

Identify opportunities to integrate PPI into your SP program

Facilitated group discussion - 10 mins

Groups will be guided to reflect on a shared experience in a way that builds understanding and spurs coordinated action sifting for insights and shaping new directions. Feedback, from both faculty and peers in the group, will help embed learning and aid transfer to real situations.

The wrap up - 5 Mins

To highlight key take home messages. Learning through investigation guides the learner to explore, compare, and analyze resources which reflect the concepts under consideration. Suggestions for further reading to invite participants to investigate further on their own will be provided in the wrap up.

Educational methods: Interaction and Group Dynamics

Educational Methods

- Ice breaker activity
- Think pair share small group activity
- Case study presentation
- Facilitated large group discussion to provide opportunities for elaboration and interactivity facilitated by faculty.
- Small groups design task

Expected impact

Create collaboration, and networking opportunities for educators to augment the use of participatory design with simulated participant methodology to give voice to patient/service users and provide authentic learning experiences.

Target audience

Educators interested in using patient and public narratives to create simulated cases

Level: introductory/ intermediate/ advanced

Suitable for all levels

Maximum number of participants

50

Keywords

Patient voice, public patient involvement, simulation patient/participant case writing, narrative capture methodology, participatory methodology

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Space to accommodate small groups of five people
Slide Projector



SOCIETY FOR
SIMULATION IN EUROPE

Peer Observation and Feedback to Improve Debriefing Skills

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Jenny W. Rudolph	Massachusetts General Hospital - Institute for Health Professions
Gabriel Reedy	Kings College London
Ignacio Del moral	Marquis de Valdecilla Hospital
Sasa Sopka	University Hospital Aachen
Jose Maestre	Marquis de Valdecilla Hospital
Demian Szyld	Boston University Medical Center
Andrea Lenés	Aachen University Hospital and Medical School

Introduction & Aims

Simulation educators can strengthen debriefing skills if they create "communities of practice," groups of peers who use observation and feedback to help each other improve. "Debriefing the debriefer," a process by which peers or mentors give feedback on each other's debriefing allows both critic and debriefer to grow and cultivate their ability to reflect on their own strengths, weaknesses, comfort and stretch zones.

Intended Learning Outcomes

1. Apply effective observation and inquiry techniques in debriefing through structured role play exercises
2. Explain the role of the debriefers' hidden assumptions in driving both functional and dysfunctional debriefings
3. Demonstrate participation in a "community of practice" which allows for a safe yet challenging context to examine one's own debriefing skills

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

The session's operational highlights and key features which provide hands on practice are:

- 1) The bulk of the session is dedicated to active practicing of debriefing-the-debriefer skills through giving and receiving feedback. The participants will be seated in tables with each table facilitated by a workshop faculty.
- 2) Workshop faculty will engage participants in structured role-play exercises to practice debriefing-the debriefer, as well as giving and receiving feedback.
- 3) Short videos of simulated debriefings will be used as an instructional tool to provide the basis and background for debriefing-the-debriefer.
- 4) Faculty will provide worksheets as a resource to the participants to help them structure their debriefing of the debriefer.

Educational methods: Interaction and Group Dynamics

Three rounds of deliberate practice:

- observe a partial debriefing,
- recognize and describe behaviors to explore with a peer;
- practice formulating leading a brief feedback conversation.

Building a community of practice: The community of practice is a common K-12 education model for professional development based on the concept that teachers can improve their performance and their desired outcomes if they work in concert as opposed to each minding their own classroom. We seek to encourage local, or distributed partnerships for simulation faculty to improve their practice and offer practical, low cost ways of achieving this. Following a very short didactic presentation, the bulk of the workshop is dedicated to practicing giving and receiving feedback on videos of debriefings. Workshop participants will be seated small groups and work with faculty and graduates of the Institute for Medical Simulation instructor training program who are experienced debriefing and feedback coaches.

Expected impact

Strengthened ability to observe, and provide developmental feedback on various debriefing "moves".

Developing a gut feel for what it is like to work in a supportive yet challenging environment that enhances peer feedback skills.

Be able to describe and carry out a peer feedback process at one's home institution.

Target audience

Simulation faculty who develop other peers or themselves.

Level: introductory/ intermediate/ advanced

Intermediate and Advanced

Maximum number of participants

60

Keywords

Faculty development, peer feedback, debriefing, debriefing the debriefing

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

- Tables or chairs that allow people to work in groups of 5-10
- ability to project slides
- Ability to play sound and video



SOCIETY FOR
SIMULATION IN EUROPE

Peers of the Realm - An invitation to join the Round (Review) Table.

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Rebecca Szabo	Gandel Simulation Service in partnership with The University of Melbourne
Gabriel Reedy	King's College London
Susan Eller	Stanford University
Kirsty Freeman	Duke-NUS Medical School
Carla Sá Couto	Universidade do Porto

Introduction & Aims

Peers of the Realm - becoming part of the academic peer review process. Journal peer review processes and editorial decision making are an important part of science communication and publishing.

In this workshop we hope to make some of the processes clearer, provide guidance and facilitate discussion about how best to approach a for authors, editors and reviewers.

This will cover the who, why and how of the peer review process.

Aims:

1. Describe the peer review process
2. Optimise how to approach peer review as a feedback process
3. Articulate how peer reviewing can contribute to your field, research, career and understanding

Intended Learning Outcomes

By the end of the session participants should have a greater understanding of the journal peer review process from submission to decision and how to approach the review process as a feedback cycle as authors and reviewers. Following the session participants should also have a greater appreciation of how reviewing can contribute to their field, research, career and understanding of scientific processes.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

By the end of the session participants should have a greater understanding of the journal peer review process from submission to decision and how to approach the review process as a feedback cycle as authors and reviewers.

Following the session participants should also have a greater appreciation of how reviewing can contribute to their field, research, career and understanding of scientific processes.

5 minutes: welcome and introduction of workshop and facilitators
5-10 minutes: interactive group introduction of participants at tables
10 minutes: aims and learning objectives
10 minutes: quick overview of peer review process and perspective of an author, reviewer, editor
25 minutes: facilitated group work at tables based on an example manuscript
25 minutes: facilitated discussion in plenum of group work with each table represented
10 minutes: summary of key take homes and any actions to take away for participants and facilitators

Educational methods: Interaction and Group Dynamics

Interactive and collaborative session. Presentation and discussion. Facilitated small group work as well as larger group facilitated discussion and sharing of thoughts as a community of practice.

Small groups at tables working together through extracts of example manuscripts with facilitators after brief mini-didactic overview presentation and discussion of what we consider to be peer review as well as strengths and weaknesses.

The groups will work through their section of an example manuscript together to apply some of the review concepts discussed. A facilitated discussion with all groups will then be conducted to share ideas, reviews and thoughts on the peer review process.

Handouts will be provided including examples of manuscript extracts and examples of reviews to demonstrate various stages of the review process and how to approach reviewing with a feedback mentality.

Expected impact

The intent will be to have varied experience of peer review at each small group table with a facilitator also assisting during the small group discussions and peer review. It is anticipated participants will have an increased understanding and confidence of the peer review process and hoped this will encourage people to become or continue to be reviewers.

This may form the basis for a paper or outline of quality assurance, training or development opportunities for manuscript and abstract peer review.

Target audience

Anyone already participating in or interested in participating in being a reviewer or author. All levels of experience and expertise are part of the target audience from novice to expert with a view everyone will be able to learn and contribute something. It may be most useful for introductory to intermediate but a lot would be gained by having advanced members in the audience to contribute their expertise and thoughts.

It is anticipated if accepted this workshop will fit into the SiReN stream and that would be the target audience.

Level: introductory/ intermediate/ advanced

all: introductory-intermediate-advanced

Maximum number of participants

20-40 participants depending on room size and interest. Ideally 5-6 tables. Facilitators - 5.

Keywords

Peer review, research, scholarship, feedback

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Tables and chairs with ideally 5-6 per table

Audio-visual: Projector and WiFi for short PowerPoint introductory presentation

Hand outs will be provided; pens

Whiteboard or flip-chart if available but not essential with markers



SOCIETY FOR
SIMULATION IN EUROPE

Practical aspects of establishing Student-as-Teacher programme for simulation-based education

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

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Introduction & Aims

Medical students often engage in teaching roles in undergraduate medical education (UME). However, teaching is considered a skill, formal training of student educators is provided less frequently. Over the past few years, simulation-based education (SBE) has become a popular educational tool in UME. Building a simulation-based programme indispensably requires a number of educators equipped with a specific set of skills and attributes. The faculty represent one of the most critical resources of any simulation centre. Developing Student-as-Teacher (SAT) curriculum reflecting pre-existing undergraduate medical curriculum may improve besides other things the faculty support.

The aim of this workshop is to introduce the idea of SAT programme as a possibility of faculty development for simulation programmes and to discuss practical aspects of establishing the SAT programme.

Intended Learning Outcomes

The participant of the workshop is able to:

- consider the advantages and disadvantages of SAT programme in the context of his local setting
- identify elementary components of SAT programme for SBE
- propose the plan and the timeline for SAT curriculum

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

After a short theoretical introduction to the topic, the participants will be divided into small working groups. Based on the prepared handout, they will try to design a proposal of a Student-as-Teacher programme curriculum for simulation-based education step by step. There will be a group discussion after each step of the design process. In the second part of the workshop, participants will discuss the advantages and disadvantages of SAT programme to be prepared to present and advocate the programme in their local setting.

Educational methods: Interaction and Group Dynamics

small working groups, design thinking activity, discussion

Expected impact

The participants will be able to present the idea of Student-as-Teacher programme for SBE, discuss the pros and cons of SAT programme considering their local setting and design the plan and the timeline for SAT curriculum as a first draft. Our team has a four-year experience running SAT programme for a simulation-based first aid course. The aim of the workshop is not only to share practical tips and tricks but also to explore the stakeholders' perspectives.

Target audience

everyone interested in the topic is welcomed

Level: introductory/ intermediate/ advanced

introductory

Maximum number of participants

40

Keywords

student, teacher, lector, faculty development

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

tables and chairs for small working groups, printed handout materials, flipchart, pens, PC, projector



SOCIETY FOR
SIMULATION IN EUROPE

Principles of skills training_ why, what and how?

Format: Workshop

Topic: Surgical and Psychomotor Skills Training

Authors

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Leizl Joy Nayahangan

CAMES

Introduction & Aims

Healthcare workers and patients can no longer accept practicing on patients to learn procedural skills. An increasing focus on competency-based proficiency in pre- and post-graduate work requires educators to revise the quality and efficiency of skills training. In modern healthcare with a patient-safety focus, and conceptual developments in psychomotor/procedural skills training, clinical educators must apply important learning principles to designing training programs.

Aim: The aim of this workshop is to (1) explore useful educational principles for high quality and efficient psychomotor skills training and (2) exchange experiences in succeeding at delivering skills training.

Intended Learning Outcomes

By the end of this session participants will:

1. Appreciate integrating patient safety and health-care worker perspectives into skills training
2. Appreciate the need to apply educational principles to designing skill training
3. Discuss what is unique about teaching and learning psychomotor procedural skills.
4. Gain knowledge about important educational theory, concepts and models relevant to competency-based psychomotor skills training
5. Exchange experiences in delivering efficient psychomotor skills training

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Time (mins) - Activity

5 Welcome & Introduce workshop authors

5 Interactive group introduction of participants

15 (1) Aims & Learning Objectives presented

(2) Intro of frameworks for clinical competency and data about patient safety perspectives on psychomotor skills (relevance)

(3) Open questions: (3.1) What are psychomotor skills? (3.2) How do we know if the skills training we provide is efficient for competency and patient safety?

25 Facilitated group work: What characterizes high quality psychomotor skills training?

35 Facilitated discussion in plenum of group work: Elicit group answers in plenum and connect to established principles

and methods of high quality skills training (i.e. mastery learning, needs analysis incl. patient safety data, assessment: formative and summative, feedback, minimum passing standard, Millers pyramid, instructor characteristics, deliberate practice)

5 Summarise and bid adieu

Educational methods: Interaction and Group Dynamics

- Interactive sociometry introduction
- Presentation of frameworks: skills concept, competency and patient safety frameworks
- Facilitated group work – stimulating exchange of knowledge and experience from the groups
- Plenum: Collecting and discussing each group's results and connecting them to established educational principles, methods and models
- Creating a collective mega list from workshop, disseminating to the participants
- Plenum summary

Expected impact

Participants will be inspired and better prepared to return to their organisations and strategically work on how they design and deliver efficient psychomotor procedural skills to improve clinical competency and patient safety

Target audience

Educators and program directors who provide psychomotor procedural skills training

Level: introductory/ intermediate/ advanced

Introductory and Intermediate

Maximum number of participants

40 (to be divided in 6-7 groups)

Keywords

Psychomotor skills, training, educational principles, curriculum design

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Projector

Wifi

Pens

Flipcharts



SOCIETY FOR
SIMULATION IN EUROPE

Psychological safety and cultural contexts

Format: Workshop

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

David Grant	University of Bristol
Michaela Kolbe	University Hospital Zurich
Susan Eller	Stanford School of Medicine
Marc Lazarovici	Medical Center of the Munich Ludwig-Maximilians-University
Ralf Krage	Institute for Excellence in Health Professions Education

Introduction & Aims

For individuals and organisations to learn and improve practice they must engage in reflective learning through challenging existing thoughts, values, feelings and actions. In order to challenge existing belief systems staff need to feel psychologically safe.

In this workshop, we will explore the issues, concepts, and concerns associated with psychological safety, and how it is necessary to establish effective learning and work environments. In addition, we will explore not only the relationships and co-dependencies between psychological safety in simulation and works spaces, but also the role of cultural context in creating and maintaining psychological safety for everyone involved in the learning process.

Intended Learning Outcomes

- Group to generate a practical definition of psychological safety
- Explore the characteristics of psychological safety
- Define domains that contribute to psychological safety
- Define determinant factors of psychological safety in each domain
- Understand the role of the cultural context in creating or challenging psychological safety
- Explore the component elements required to create and maintain psychological safety
- Explore component elements required to recover psychological safety

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

0 – 10 min Introductions, session overview, ground rules

10 – 15 min Defining Psychological safety – Audience Group activity

Key features to bring out – Perceived, dynamic, does not mean absence of challenge

15 - 30 min Groupwork: Components that contribute to psychological safety in the domains of individual, Team, Organization, Demographic

30 – 40 min Group report out

40– 45 min Exemplars of components – Opportunity to add elements not considered by groups

45 – 50 min Intro creating psychological safety

50 – 65 min Groupwork Proactive creating psychological safety
65 – 75min Group report out
75 – 80min Groupwork reactive creating psychological safety
80 – 85min Group report out
85 – 90 min Summary and wrap-up

Educational methods: Interaction and Group Dynamics

Interactive needs assessment
Didactic presentation of frameworks to enable co-construction of knowledge through interactive small group discussions
Summary of collective learning

Expected impact

Socially constructed understanding of the connection and inter relationship between psychological safety in educational spaces and workspaces.
Deepened understanding of the domains that contribute to a perception of psychological safety and components that determine its perception in each of the domains.
Deepened understanding of the different layers of cultural impact on psychological safety at individual, team and organisational level.

Target audience

Healthcare professionals and educators at all levels of expertise and experience.

Level: introductory/ intermediate/ advanced

All levels of experience and expertise

Maximum number of participants

50

Keywords

culture, psychological safety, individual learning, organisational learning, reflective practice

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Audiovisual – projector and sound
Wifi
Pens
Flipcharts



SOCIETY FOR
SIMULATION IN EUROPE

Qualitative research workshop: a celebration and constructive critique of your favourite qualitative research

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Birgitte Bruun	Copenhagen Academy for Medical Education and Simulation
Debra Nestel	University of Melbourne
Gabriel Reedy	Kings College
Peter Dieckmann	Copenhagen Academy for Medical Education and Simulation
Camilla Ahrensbach	Copenhagen Academy for Medical Education and Simulation
Ragnhild Drejer Holgaard	Copenhagen Academy for Medical Education and Simulation
Sofie Mundt	Copenhagen Academy for Medical Education and Simulation
Jannie Lysgaard Poulsen	Copenhagen Academy for Medical Education and Simulation

Introduction & Aims

Qualitative research receives increasing attention in health care simulation, but it can be challenging to design and conduct well. This workshop – borrowing the air of a salon - offers an informal but facilitated space for researchers to explore together what good qualitative research might be. We will focus less on specific research topics and more on trying to elucidate exactly how qualitative studies, ideas and writers give us new insights. The aim of the salon is to share inspiration and thereby to contribute to raising the quality of our own qualitative research.

Intended Learning Outcomes

- to get to know more examples of good qualitative research on simulation and learning,
- to reflect on its qualities together,
- to expand personal and professional networks in the field of qualitative research on health care simulation.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

15 min Facilitated and interactive introduction of all participants

10 min Presentation of salon format by hosts

20 min Flip-chart mappings in small groups (What is your favourite qualitative research on simulation and learning? What makes it good?)

15 min Facilitated plenum discussion

20 min Break-out into smaller salons depending on participants interests
10 min Closing observations in plenum

Educational methods: Interaction and Group Dynamics

Presentations, interactive mappings, and discussions.

Expected impact

Participants will leave the workshop with new inspiration as to what makes qualitative research good, a list of key references in the field of qualitative simulation research, and a network of people with the same interest.

Target audience

Researchers with some experience in qualitative research with an appetite for more.

Level: introductory/ intermediate/ advanced

Intermediate and advanced

Maximum number of participants

30

Keywords

Research methods, theory, research ethics, epistemology, research politics, fun

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Four flipchart stands with paper that can glue to the walls, a lot of permanent markers, large post-its (A5), 30 armchairs and a few fireplaces (well, less can do it too).



SOCIETY FOR
SIMULATION IN EUROPE

Running a simulation with a faculty of on, using balloons and virtual reality to teach human factors.

Format: Workshop

Topic: Technological Innovation and Technical Operations

Authors

Michael Williams

Queen's University of Belfast

Introduction & Aims

A simulation exercise will be presented which offers three features for others to compare their experiences with. Firstly, there is a spectrum of simulation, from heavily supervised to self directed. In this workshop participants will learn about a high throughput sim exercise led by one academic, in which simulated patients and learners themselves are involved in mini debriefs. Secondly the use of low tech (balloons) and high tech (virtual reality) equipment will also be presented. Finally the combination of clinical skills rehearsal (specifically ophthalmic) with human factors learning will be illustrated.

Intended Learning Outcomes

At the end of this workshop, participants will be able to:

- consider how to more efficiently run simulation exercises, i.e., using fewer faculty members
- reflect on the educational value and feasibility of both low tech and high tech means of simulation
- describe ideas for integrating clinical skills practice into a 'human factors context'

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

After an interactive introductory talk (10 minutes), all attendees can take part in and observe others engaging in some simulation stations, including: simulated removal of corneal foreign bodies using glitter and balloons, 'the wrong result being filed', telling a patient they shouldn't drive and two virtual reality models, one of pupil examination, and one of visual impairment (50-60 minutes), with discussion during this. After this, participants will have an opportunity to have a semi-structured discussion in small groups (20 minutes), and finally an interactive talk will draw together the learning, consider relevant learning theories while reviewing pertinent published literature (10 minutes). Participants will be encouraged to make specific action plans relevant to their setting. Times approximate and allow for transitions.

Educational methods: Interaction and Group Dynamics

Social learning through interaction with others
Experiential learning through taking part in simulation exercises
Reflective learning during and after the workshop
The talks will give some didactic information

Expected impact

Participants will have a rich experience upon which to reflect, to consider in their context, for example of budget, of faculty, of learning objectives, of learners. It is hoped that the workshop will help experienced simulation leaders to refine their approaches, and will encourage and inspire those new to the field.

Target audience

Those who are keen to create de novo or develop existing simulation sessions,, from any clinical or professional background. Although the setting happens to be ophthalmology, which will interest some, the emphasis will be on generalising learning to any setting.

Level: introductory/ intermediate/ advanced

Introductory / intermediate

Maximum number of participants

24

Keywords

Faculty, technology, human factors, ophthalmology

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Ability to present slides.

Notepads

Mobile microphone

Power sources



SOCIETY FOR
SIMULATION IN EUROPE

SIREN Workshop: Theories in research on simulation-based learning and instruction

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Jimmy Frerejean

Maastricht UMC+

Brena Melo

Instituto de Medicina Integral Professor Fernando Figueira

Introduction & Aims

Theory in research is essential to define “lenses” through which the research topic will be explored. Moreover, understanding different possible approaches and subsequent limitations of selecting theories may be challenging in the educational field, particularly for simulation researchers. This workshop aims to help those in the early stages of their research understand how to best “see and explore” the available theories relevant to researching learning and instruction.

Intended Learning Outcomes

After the workshop, attendees will be able to: 1) Distinguish between learning theories, instructional theories, and other theories and give examples of each. 2) Explain how choosing a theory affects different aspects of a research project, such as the perspective on the problem or topic, the research question, the methodology, methods, and interpretation of the findings.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Welcome and faculty introductions, ground rules (5 min)

Presentation (30m). First, we explain how theories can inform all phases of the research project (Cheung, Apramian, & Brydges, 2019). We then zoom in on two categories in the universe of theories: (a) learning theories describing how learning works (e.g., behaviorist, cognitivist, constructivist, and connectionist theories) and (b) instructional theories explaining which methods work in which situations (e.g., cognitive apprenticeship, first principles of instruction, four-component instructional design) (Reigeluth & Carr-Chellman, 2009). We argue that learning theories are helpful for research that aims to understand or describe how people learn in certain situations, while instructional theories are helpful for research projects in which you want to investigate what sort of instruction works in a given situation.

Group work (30m). Each group receives a description of a research problem. They also receive three succinct descriptions of a learning theory (e.g., cognitive load theory; see Van Merriënboer & Sweller, 2010), an instructional theory (e.g., first principles of instruction, see Merrill, 2002), and another theory (e.g., self-efficacy theory; see Lundberg, 2008). Groups will look at the problem using different theories as vantage point and describe a research plan for each of these. Groups receive a template with guiding questions to fill out (Appendix 1).

Plenary discussion (15m). Groups report their research plans and compare and contrast their outcomes, leading to a discussion on how theory informs all aspects of research.

Closing reflection (10 min) Participants formulate take-home messages.

References

- Cheung, J. J. H., Apramian, T., & Brydges, R. (2019). Starting your research project: From problem to theory to question. In D. Nestel, J. Hui, K. Kunkler, M. W. Scerbo, & A. W. Calhoun (Eds.), *Healthcare Simulation Research* (pp. 21–27). Springer International Publishing. https://doi.org/10.1007/978-3-030-26837-4_4
- Lundberg, K.M. (2008). Promoting self-confidence in clinical nursing students. *Nurse Educator*, 33, 86-89. <https://doi.org/10.1097/01.NNE.0000299512.78270.d0>
- Merrill, M. D. (2002). First principles of instructional design. *Educational Technology Research & Development*, 50, 43–59. <https://doi.org/10.1007/BF02505024>
- Reigeluth C. M., & Carr-Chellman, A. A. (2009). Understanding instructional theory. In Reigeluth, C. M. (Ed.). (2009). *Instructional-Design Theories and Models: Building a Common Knowledge Base* (Vol 3; p3-26). Routledge.
- Van Merriënboer J.J.G. & Sweller J. (2010). Cognitive load theory in health professional education: Design principles and strategies. *Medical Education*, 44, 85–93. <https://doi.org/10.1111/j.1365-2923.2009.03498.x>

Educational methods: Interaction and Group Dynamics

Presentation, group work, plenary discussion

Expected impact

Cheung, Apramian, and Brydges (2019) report that our community faces a significant challenge: a lack of theory-oriented research. With this workshop, we hope to help those early in their research career make more or better use of theory, leading to impactful and meaningful research that benefits the community.

Target audience

SIREN-network PhD researchers or junior researchers with a basic understanding of the research process.

Level: introductory/ intermediate/ advanced

Intermediate

Maximum number of participants

25

Keywords

NA

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Projector for the lecture, wireless microphone. Cabaret-style seating arrangement (approx. 5 per table).

Download: [Download figure/table](#)



SOCIETY FOR
SIMULATION IN EUROPE

SP Feedback Practices: What do we know now? And how can we do better?

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Dr Andrea J Doyle	RCSI University of Medicine and Health Sciences
Ms Clare Sullivan	RCSI University of Medicine and Health Sciences
Ms Michelle O'Toole	RCSI University of Medicine and Health Sciences
Ms Anna Tjin	RCSI University of Medicine and Health Sciences
Ms Anastasija Simiceva	RCSI University of Medicine and Health Sciences
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Dr Nancy McNaughton	Michener Institute of Education
Mr Robert MacAulay,	University of California San Diego
Prof Frank Coffeey	Nottingham Trent University
Mr Michael J Andreson	RCSI University of Medicine and Health Sciences

Introduction & Aims

Feedback is a key aspect of the simulated participant (SP) role which necessitates that SPs take on an educator role to help shape the development of learners' communication skills. Feedback, however, is a skill that SPs find difficult to master [1]. The Association for Standardized Patient Educators (ASPE) has published best practice standards for feedback for SP training [2] yet in the past these feedback processes did not align with recommendations [3]. Suboptimal feedback practices may therefore be denying learners of the valuable feedback they need, to learn and improve. To date literature reviews investigating the SP role have typically focussed on their effectiveness in a certain discipline or for certain communication competencies. Bokken et al.'s 2009 review of feedback by simulated patients recommended further research to identify the domains in which simulated participants could most effectively provide feedback to students. Our BEME scoping review systematically maps the evidence related to SPs role as educators and identifies how SP feedback practices are part of training. Our findings will guide education and further research and provide a more fine-grained understanding of simulated participants training requirements and their unique contributions to communication skills interventions.

Intended Learning Outcomes

1. Define key elements of evidence informed feedback training for SPs
2. Implement SP feedback training exercises

3. Apply SP feedback practices to support reflective practice

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This session will highlight evidence informed key features of feedback, explore how to prepare SPs to engage in evidence informed feedback and provide insights on the elements of training which support SP preparation for their role. This interactive workshop will include video vignettes and role-play in order to prepare SP educators to support SPs for their role in feedback practices. We will also discuss methods for ongoing continuous improvement through reflective practice.

1 ■ 10 minutes: Introductions, Welcome & Agenda

10 ■ 25 minutes: Evidence informed feedback practices and the development of proposed SP best practice training

25 ■ 65 minutes: Small group activity including video vignettes and role-play

65-85 minutes: Larger group discussion and reflection

85 ■ 90 minutes: Questions & Answers

Educational methods: Interaction and Group Dynamics

We will employ a blended learning approach in this workshop to include a didactic lecture, role play and video vignettes.

Expected impact

This workshop aims to prepare SP educators & those professionals that engage with SPs in their teaching practice to implement evidence informed training to support and develop SP feedback practices.

Target audience

SP Educators, faculty involved in communication skills training

Level: introductory/ intermediate/ advanced

Intermediate

Maximum number of participants

50

Keywords

Simulated participant, communication skills, feedback, methodology, training, quality

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Equipment

Tables and chairs for group work for up to 50 people

Presentation screen for slide deck

Audio-visual system for Video & audio playback

Internet access

References

1. Nestel, D., Clark, S., Tabak, D., Ashwell, V., Muir, E., Paraskevas, P., & Higham, J. (2010). Defining responsibilities of simulated patients in medical education. *Simul Healthc*, 5(3), 161-168.
2. Lewis, K. L., Bohnert, C. A., Gammon, W. L., Holzer, H., Lyman, L., Smith, C., . . . Gliva-McConvey, G. (2017). The Association of Standardized Patient Educators (ASPE) Standards of Best Practice (SOBP). *Adv Simul (Lond)*, 2, 10.
3. Bokken, L., Linssen, T., Scherpbier, A., van der Vleuten, C., & Rethans, J. J. (2009). Feedback by simulated patients in undergraduate medical education: a systematic review of the literature. *Medical Education*, 43(3), 202-210.



SOCIETY FOR
SIMULATION IN EUROPE

SShaDoW: Supervising Simulation And Debriefing Wisely

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Carla Sa-Couto

CINTESIS@RISE, Community Medicine, Information and Decision Sciences Department (MEDCIDS), Faculty of Medicine, University of Porto (FMUP); EuSim Group;

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UKM Trainingszentrum, University Hospital; EUSIM Group;

Hilde Hetland

Stavanger University Hospital; SAFER; EUSIM Group;

Introduction & Aims

Guided self-reflection and direct feedback are well-established strategies to facilitate learning in simulation-based education (SBE) [1-2]. These strategies are also commonly used in faculty development programs [3], to enhance learning for both basic or continuous training of SBEinstructors. There are several facilitator feedback ratings tools [1-2,4], developed to measure debriefing quality. Although these tools serve their purpose well, they are difficult to apply in formative contexts, and only address the debriefing component.

Considering this need, a non-rating tool with an overarching structure was developed: SShADoW - Supervising Simulation And Debriefing Wisely. SShADoW is a standardized guiding tool that supports instructor-trainers, throughout the process of supervising (or shadowing) simulation and debriefing activities. Its aim is to provide a guidance for a structured and standardized reflective conversation on the simulation experience.

SShADoW is meant to be an overarching instrument and cognitive aid to reflect on simulation and debriefing activities. Despite it builds on existing tools it is not bound on any of them (e. g. debriefing models, OSAD, DASH, etc.). The tool was structured to cover the most relevant aspects of a simulation activity, including all phases (from scenario design to debriefing), through an integrative but flexible approach. SShADoW was primarily developed to be used during simulation instructor courses, although it is expected to be also applicable in longitudinal faculty development programs or as a self-development strategy.

In this workshop SShADoW will be introduced and participants will have the opportunity to apply it in an interactive exercise. The collected experiences will provide useful insights to further develop/refine the proposed tool.

References

1. Arora, S., et al., Objective structured assessment of debriefing. Bringing science to the art of debriefing in surgery. *Annals of Surgery*, 2012. 256(6): p. 982-988.
2. Brett-Fleegler, M., et al., Debriefing assessment for simulation in healthcare: Development and psychometric properties. *Simulation in Healthcare*, 2012. 7(5): p. 288-294.
3. Cheng A, Grant V, Dieckmann P, Arora S, Robinson T, Eppich W. Faculty Development for Simulation Programs. *Simulation in Healthcare* 2015. 10:4: 217-222.
4. Leighton, K., V. Mudra, and G.E. Gilbert, Development and psychometric evaluation of the Facilitator Competency Rubric. *Nursing Education Perspectives*, 2018. 39(6): p. E3-E9

Intended Learning Outcomes

1. Identify the challenges of supervising simulation and debriefing activities
2. Exchange successful approaches and techniques
3. Explore SShADoW as a potential useful tool
4. Apply SShADoW to a simulation exercise

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- (10 min) [All] Active introduction and ice-breaking activity
- (10 min) [All] Brief brainstorm around the challenges of supervising simulation and debriefing activities
- (10 min) [All] Introduction of the SShADoW
- (30 min) [in small groups] Applying SShADoW to a simulation exercise
- (10 min) [in small groups] Reflecting on the exercise and the utility of the guiding tool
- (15 min) [All] Gathering experiences
- (5 min) [All] Take home messages

Educational methods: Interaction and Group Dynamics

Group dynamics; Interactive exercises; Reflexive discussions;

Expected impact

Providing instructor trainers, a standardized guiding tool for supervising simulation and debriefing activities. Subsequently, participants in simulation instructor courses will benefit from a structured approach that would enable more insights.

Target audience

Instructor trainers; Instructors involved in faculty development programs

Level: introductory/ intermediate/ advanced

Advanced

Maximum number of participants

16

Keywords

Faculty development; simulation activities; reflective practice; feedback;

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Whiteboard; Flipchart; Moving chairs and tables; AV-equipment and computer/laptop



SOCIETY FOR
SIMULATION IN EUROPE

STEPS to Systems safety through Situational Monitoring

Format: Workshop

Topic: Patient Safety and Quality Improvement

Authors

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University of Bristol

Marc Lazarovici

Medical Center of the Munich
Ludwig-Maximilians-University

Cristina Diaz-Navarro

Health Education and Improvement Wales

Introduction & Aims

Maintaining safety of the complex adaptive modern healthcare systems we work in requires healthcare professionals to be skilled at maintaining continuous situational monitoring of the system.

Implementation of situational monitoring that takes all system factors into account often leads to significant cognitive load. The STEPS Tool developed using the SEIPS Framework has the potential to reduce intrinsic factors related to cognitive load through structuring thoughts. In addition to supporting situational monitoring, the STEPS Tool also supports structured systems thinking during the design of simulation scenarios and the post hoc analysis of simulated and real-life clinical events.

During this workshop participants will be introduced to the SEIPS Framework which allows analysis of patient journeys and patient care pathways and the STEPS Tool. Participants will then be given the opportunity to apply the STEPS tool whilst analysing example events for contributory systems factors.

Intended Learning Outcomes

- Familiarisation with Systems Engineering in Patient Safety (SEIPS) Framework
- Knowledge of components of continuous situational monitoring
- Understanding of systems resilience and adaptive capacity
- Knowledge of STEPS Tool for event analysis
- Practical implementation of STEPS tool to apply systems thinking to event analysis

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

0 – 5 min Introductions, session overview, ground rules

5 – 20 min Introduction to SEIPS, Resilience and situational monitoring

20 – 30 min Group Exercise: Define factors in work system categories

30 – 40 min Group feedback

40 – 45 min Share Exemplar factors

45 – 50 min Intro to STEPS Tool

50 – 62 min Groupwork watch video – target practice

62 – 77 min Groupwork: Identify factors in categories

77 – 87 min Group feedback

87 – 90 min Wrap up

Educational methods: Interaction and Group Dynamics

Interactive needs assessment

Didactic presentation of frameworks to enable co-construction of knowledge through interactive small group discussions

Summary of collective learning

Expected impact

Socially constructed understanding of what constitutes a system.

Deepened understanding of the elements that determine functioning of a work system.

Ability to apply STEPS tool as cognitive aid for designing systems simulation scenarios and structuring post hoc analysis of simulated and real-life clinical events.

Target audience

Healthcare professionals and educators at all levels of expertise and experience.

Level: introductory/ intermediate/ advanced

All levels

Maximum number of participants

50

Keywords

systems, safety, resilience, adaptive capacity, situational monitoring

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Audiovisual – projector and sound

Wifi

Pens

Flipcharts



SOCIETY FOR
SIMULATION IN EUROPE

Setting and maintaining Psychological Safety for learners when addressing unconscious bias and Systemic “isms” in Simulation.

Format: Workshop

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

Emma Baxey	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Anita Bignell	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Dr Marcela Schilderman	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Dr Megan Fisher	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Dr Naila Saleem	Maudsley Learning, South London and Maudsley NHS Foundation Trust
Kiran Virk	Maudsley Learning, South London and Maudsley NHS Foundation Trust

Introduction & Aims

Research indicates that inequalities experienced by minority groups, both staff and patients, are having a negative impact on work experiences and health outcomes (1, 2). High quality simulation education can play a key role in challenging these systemic issues (3).

This interactive workshop, informed by psychological theory and practice, aims to help participants create a plan of how to build and maintain psychological safety of learners and faculty when addressing systemic Equality Diversity and Inclusion (EDI) challenges in healthcare and patient safety.

Intended Learning Outcomes

In this interactive workshop learners will:

- learn how to build psych safety in the context of EDI
- explore EDI needs in healthcare organisations and for our learners
- develop skills and confidence to identify and explore EDI in debriefs

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

10 mins: Intros

2 mins: Basic Assumption

20 mins: Icebreaker activity

10 mins: EDI needs of your organisation

10 mins: Current EDI practice?

10 mins: Using psychologically informed approaches when debriefing EDI- Defence mechanisms and how to approach.

20 mins: Top tips and anonymised examples from our work.

10 mins: Wrap up and Q&A.

Educational methods: Interaction and Group Dynamics

Group discussions

Didactic teaching

Polls

Case study examples

Expected impact

- improved understanding of EDI issues in healthcare

- improved awareness of strategies to establish psychological safety in training

- improved skills to integrate EDI issues as part of debriefs

Target audience

Simulation debriefers from any background

Level: introductory/ intermediate/ advanced

introductory

Maximum number of participants

30

Keywords

Equality diversity and inclusion, debrief, psychological safety

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Pens and paper

Whiteboards/ flipcharts/ pens/ parkers/ Video projector with AV output.



SOCIETY FOR
SIMULATION IN EUROPE

Setting up a simulation-based inter or intraprofessional learning program for pre-registration healthcare students

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

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Holmesglen Institute and Monash University

Melissa Ciardulli

Holmesglen Institute

Introduction & Aims

With a long history in healthcare education, inter and intra professional learning (IPL) has become an essential feature of undergraduate health professions education. Simulation is an interactive and authentic teaching and learning strategy that provides the perfect vehicle for IPL. It can prepare health care workers to work in teams and develop capabilities for interprofessional practice. Both IPL and simulation have followed a similar historical trajectory with the same drivers and rationale. The rise of the quality movement, the imperative for patient safety to prevent medical error and the subsequent need to train health care students to communicate and collaborate more effectively has led to many IPL initiatives using simulated-based education methods. Despite its long history, challenges still exist as to how to design, implement and evaluate IPL to large cohorts of students using evidence-based methods.

This workshop will provide participants with an opportunity to design, a comprehensive evidence-based IPL program focused on the use of simulation in the context of large group teaching in pre-registration healthcare courses.

Intended Learning Outcomes

By the end of the workshop participants will be able to:

- Identify the features of inter/intra professional learning and practice
- Explore simulation modalities best suited to IPL
- Examine the enablers and barriers of implementing IPL to large groups of students using simulation
- Discuss the steps of quality education design in IPL using the 4Ps model of IPL curriculum development (presage, planning, process and product)
- Design a simulation focused IPL program

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This session will include:

- Overview of key definitions (content delivery)
- Provision of interactive examples of simulation modalities best suited to IPE
- Brainstorming activity on challenges associated with IPE and simulation including strategies to overcome: what works / what to avoid
- Overview of the 4Ps model of IPE curriculum design applied to the IPE context (content delivery)
- Small group work on designing own program

Educational methods: Interaction and Group Dynamics

The workshop will use interactive small group methodologies such as discussions, brainstorm activities, paired exercises, and small group practical 'hands on' activities such as video analysis to develop participants' knowledge and skills in creating a teaching program. In addition, a comprehensive workbook outlining the workshop materials, resources and exercises will be provided.

Expected impact

Participants will have the opportunity to produce a simulation focused IPL program using a well-established education framework aligned to their own teaching context

Target audience

Pre-registration course planners and teachers

Level: introductory/ intermediate/ advanced

Introductory to advanced (all levels)

Maximum number of participants

25-30

Keywords

interprofessional learning; intraprofessional learning; curriculum design;

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

- Data projector
- Laptop with video and audio capabilities
- Tables in clusters for small group learning
- Flip charts



SOCIETY FOR
SIMULATION IN EUROPE

Sim Scenario Canvas.

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

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Pierangelo Pinertti	Centro Professionale Sociosanitario Medico Tecnico
Emanuele Capogna	EESOA
Paolo Gastaldi	Ospedale Santo Spirito
Marc Lazarovici	LMU University hospital
Juan Manuel Fraga Sastrias	Cancer Center Tec 100

Introduction & Aims

Scenario design is a key but complex process: the various elements of a scenario design must be consistent with each other in order for experience to be valuable and meaningful and to support the critical reflection which occurs in the following debriefing.

The workshop presents how innovative dynamics can be created to build inter-professional simulation scenarios. It will be organized in a frontal part (with plenary discussion) and hand-on small groups. The theory behind the scenario design, the fundamentals of a scenario and the variables to consider in the design will be described. The new tool Sim Scenario Canvas (SSC) and its ontology will be presented.

Intended Learning Outcomes

Participants will reflect on the importance of the design and conceptual phase of the scenario to ensure that the debriefing, and the simulation session in general, is didactically effective.

Participants will become familiar with the innovative collaborative tool Sim Scenario Canvas to use for the construction of scenarios, especially inter-professional ones.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

5 min Intro of the faculty and the theoretical concepts of cognitive and social skills, statues work, and embodied learning

15 min The theory behind the scenario design and the variables to consider in design will be described. The new Sim Scenario Canvas (SSC) and its ontology will be presented.

30 min In small group work, participants will be engaged in building a interprofessional scenario in a collaborative manner using the SSC.

30 min Each group will share the difficulties in designing the scenario and any advantages in using the SSC.

10 min Concluding discussion

Educational methods: Interaction and Group Dynamics

Presentation, group work about scenario design with canvas, group discussion

Expected impact

Participants will reflect on the importance of the design and conceptual phase of the scenario to ensure that the debriefing, and the simulation session in general, is didactically effective. They will become familiar with an innovative collaborative tool, the Sim Scenario Canvas, to use for the construction of scenarios, especially inter-professional, and based on the Visual Thinking theory.

Target audience

Simulation facilitators, Scenario and Course Designers

Level: introductory/ intermediate/ advanced

Intermediate and advanced

Maximum number of participants

60

Keywords

Scenario design, Visual Thinking, Canvas

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

projectors, a room with flexible furniture and empty space, colored sticky notes (i.e. Post-it), colored markers. Faculty will bring n.6 A0-format printed copies of Sim Scenario Canvas [<https://simzine.it/resources/the-sim-scenario-canvas/>]



SOCIETY FOR
SIMULATION IN EUROPE

Speaking-up, let it grow in a simulation session!

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Ruud Kuipers, Annette Koorn, Nynke de Vries-Oosterhuis, Albert-Jan Klein-Ikkink, Roelie Sitepu
Martini Hospital & University Medical Center Groningen (UMCG)

Jan-Jaap Reijnders, Paulien Harms, Laurens Reinke, Geke Blok, Jaap Tulleken.
Martini Hospital & University Medical Center Groningen (UMCG) & Hanzehogeschool Groningen (university of applied science)

Introduction & Aims

Let's grow together and experience efficient and safe behaviors in speaking-up in a for everyone doable simulation session. To reflect and debrief the session, crew resource management strategy and 'brain education' will be used. By doing so the understanding of human factor perspectives as well as specific non-technical skills in speak-up behavior ('SUB') will grow from 3 roles: actor, receiver and bystander. SUB can be defined as, 'the raising of concerns by healthcare professionals for the benefit of patient safety and care quality upon recognizing or becoming aware of the risky or deficient actions of others within healthcare teams in a hospital environment' (Okuyama et al., 2014). In healthcare, safety isn't self-evident when standard procedures are correctly followed. In the unique situation of patients, variability is also essential. In hospitals the organization and delivery of care is mostly done by interprofessional teams. In their team performance for quality and safety of care, SUB plays a crucial role. For example in preventing and mitigating potentially unsafe events which may harm patients. To all this it helps when speak-up is done properly, invited too and positively dealt with. Let's experience, perform and grow to that!

Intended Learning Outcomes

1. Reflect on own attitudes and experiences in speaking-up
2. Understand the interplay of dominant Human Factors affecting SUB
3. Experience different roles and skills in the process of speak-up as actor, receiver or bystander
4. Explain SUITS: Speaking-Up in Interprofessional Teams Strategy, to strengthen efficient and safe behaviors in speaking-up in teams

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

1. Sharing thoughts and feelings about SUB by KAHOOT
2. Clarifying dominant antecedents/mechanisms affecting SUB
3. Apply efficient and safe behaviors in speak-up in a simulation session with debriefing
4. Express a joyful message to a colleague who shows and/or supports SUB positively at the workplace
5. Reflection on values of 'SUITS' and building your storyline as take-home message

Educational methods: Interaction and Group Dynamics

Knowledge clip, KAHOOT, simulation scenario and debriefing, reflection, positive reinforcing, transfer to own organization.

Expected impact

Body of knowledge grows in (social) psychological antecedents/mechanisms, roles and skills in efficient and safe behaviors in speaking-up. Especially how SUB can be strengthened in teams, from theory to practice.

Target audience

Healthcare professionals, simulation trainers, researchers, educators, policymakers.

Level: introductory/ intermediate/ advanced

All levels.

Maximum number of participants

20

Keywords

Human Factors, Interprofessional healthcare teams; education & research; psychology

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Room size approximately 40 m²; beamer, projector screen; internet; flipchart

Download: [Download figure/table](#)



SOCIETY FOR
SIMULATION IN EUROPE

Supporting learners' self-regulatory strategies when training in simulation

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Iva Bursac

Hospital for Sick Children

Introduction & Aims

Virtual reality Simulators (VR) and other Computer-based learning environments (CBLE) present important opportunities for fostering independent learning. Relatively little focus has been placed on understanding how successful participants in these simulation curricula take advantage of these environments. It is also the case that many participants in simulation curricula that are tailored to independent learning using VR and CBLE fail to take full advantage thus necessitating support into ways of promoting effective use of these powerful simulation models. One potential mediator between these simulation models and optimal performance is the quality of participants' self-regulatory learning (SRL) processes.

We will review through many interactive exercises the main principles of models that have investigated self-regulated learning. First, learners are active in constructing their own meanings and goals from the various influences. Second, learners are capable of monitoring and controlling the cognitive, motivational, behavioral, and contextual aspects of learning. Third, regulation can be constrained or facilitated by intraindividual factors as well as extra individual influences such as context. Fourth, SRL models highlight the capability of individuals to set goals for their learning, and it is against these goals that learning is monitored.

Our goal for this workshop is to give participants a summary of self-regulated learning with examples of how we have applied in our curricula so that they can be able to do this for their own curricula, based on educational frameworks.

Intended Learning Outcomes

Discuss use of Virtual reality and Computer Based learning Environment for Independent Learning

Review main theory of Self-Regulated Learning to support independent learning using simulation

Apply the theoretical background to the design of self-directed simulation curricula

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Introduction (5 min)

VR and CBLE learning environment and their use (25 min) with large group discussion, summary and mini lecture

Theories of self-regulated learning (25 min): mini-lectures and small group session

Application of theory to design of self-directed curricula (30 min): Case-review, small groups sessions

Summary and questions (5 min)

Educational methods: Interaction and Group Dynamics

Mini-lectures
Large group discussion
Small group sessions
Case-reviews

Expected impact

Participants will be able to build or adapt simulation curricula that are self-directed

Target audience

Simulation Educators

Level: introductory/ intermediate/ advanced

Intermediate

Maximum number of participants

40-50

Keywords

virtual reality, self regulation, self directed learning, computer based learning environments

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Projector



SOCIETY FOR
SIMULATION IN EUROPE

The ABC's of Organizing an Acute Care Team: Name, Claim, Aim

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Roxane Gardner

Brigham and Women's Hospital

Jenny W. Rudolph

Massachusetts General Hospital-Institute for Health Professions

Clement Buleon

Caen Normandy University Hospital

Ignacio Del Moral

Marquis De Valdecilla Hospital

Christian Balmer

Hôpital du Valais

Sasa Sopka

University Hospital Aachen

Introduction & Aims

Problem: Organizing a team collectively AND quickly in an acute care emergency poses a stressful challenge, cognitively, emotionally and often physically. Naming the problem, organizing roles and executing clinical interventions requires the integration clinical knowledge and skill and effective teamwork. Highly knowledgeable and experienced clinicians who assert strong unilateral leadership may unintentionally weaken mutual support and speaking up from their colleagues. Ambiguous or weak leadership presence and not asserting enough clear guidance may unintentionally leave the team adrift and unsure of roles and action plan. The sweet spot of enough clarity and assertiveness by the leader that does not suppress collective action and participation is often obscure.

Team members and struggle on three dimensions of getting the team organized to manage the patient:

- Privately versus shared mental model of the crisis/problem and plan
- Leader inclusiveness and follower empowerment
- Role clarity

A shift from a mostly privately held mental of model of clinical the management plan to a publicly held shared mental model can help show the way to this sweet spot. Having identified the sweet spot we then need an easy to remember what to do.

Gap: Although clinical challenges such as obstetric emergencies, difficult or failed airway management, and CPR have driven myriad effective mnemonics for task work of clinical care such as the ABC's of resuscitation, this simplification has not made its way to teamwork. Instead we have a thicket of well-intended but too-complex principles for organizing teams.

What Name Claim Aim offers: We have developed a simple mnemonic for organizing and acute care that addresses three of the main challenges: Developing a shared mental model of the problem (Name); Establishing roles explicitly and inviting input and people to speak up and creating a temporary social contract to encourage collective problem solving and collaboration (Claim) and 3) lowering cognitive load and directing efficient clinical management through clear action plan (Aim).

Intended Learning Outcomes

- Identify obstacles to efficient teamwork in crisis situations;
- Explain the rationale for and elements of the Name/Claim/Aim tool;
- Demonstrate the use of Name/Claim/Aim mnemonic during role plays of a wilderness emergency; and airway emergency; anaphylaxis

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Plenary:

- We give a brief demonstration of NCA application using a non-clinical scenario (wilderness case)
 - o Quick debrief to help participants identify hurdles to teamwork
- We provide a description of the NCA tool and its application
- We present DP as a teaching method for NCA

Small groups:

- Participants work in groups
 - o One faculty member assigned to each team
- We present a clinical case of asthma and stop at each step to allow participants to:
 - o Identify the situation and state what is concerning about it (NAME)
 - o Allocate roles amongst their team and to elaborate on how they proceeded (CLAIM)
 - o Identify 2-3 steps they want to prioritize (AIM)

After each step, we ask one team to formulate their NAME, CLAIM and AIM

Could poll the group for a different approach if time allows

- Faculty give feedback to the team

Timeline (90 minutes total):

1. Workshop introduction, faculty introduction, disclosures (5 minutes)
2. Participants introduction and goals from 3-4 participants (5 minutes) –
3. Pre brief (5 minutes)
4. Wilderness case + debriefing (15 minutes)
5. Presentation of NCA tool (5 minutes)
6. Clinical case (asthma) to learn and practice application of NCA tool (20 minutes)
7. Clinical case (anaphylaxis) to apply NCA. Will need to preview RCDP and highlight the goals of interventions throughout the case (30 minutes)
8. Wrap up, take-aways, and learner evaluation. (5 minutes)

Educational methods: Interaction and Group Dynamics

To solidify the application of this new framework, we use two complementary approaches: 1) repeated deliberate practice of skills during the simulation cases and role plays, using a pause/discuss/resume format described and 2) use of reflective, structured debriefing to allow participants to examine and reframe assumptions that limit explicit verbal coordination of the team. In addition, we capitalize on principles of encoding specificity and state-dependent learning specifically by pausing the simulation case and role play during times of potential high-stress for the team, and encouraging the participants to use the Name/Claim/Aim structure to address gaps in team organization or shared mental models. Through using the Name/Claim/Aim mnemonic in this way we hope to spur an increased uptake and use of these collective team organization skills.

We will provide cognitive aids in English, French, and Spanish

Expected impact

This workshop will equip participants with the fundamental conceptual and practical tools to use the Name/Claim/Aim approach in their teamwork courses.

Target audience

Colleagues who are seeking high impact, high-retention methods for teaching teamwork.

Level: introductory/ intermediate/ advanced

Intermediate and advanced

Maximum number of participants

70

Keywords

Teaming, teamwork, instructional methods, facilitation

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Small tables for group work

Ability to project slides

Ability to project videos and sound

Download: [Download figure/table](#)



SOCIETY FOR
SIMULATION IN EUROPE

The Proactive Identification and Mitigation of Safety Risks in Simulation-Based Education

Format: Workshop

Topic: Simulation Management and Administration

Authors

Paul O'Connor	University of Galway
Angela O'Dea	University of Galway
Ambyr Reid	University of Galway
Dara Byrne	University of Galway

Introduction & Aims

There are a wide range of safety risks associated with the delivery of healthcare simulation. There are a range of potential risks for all stakeholders in simulation. Safety threats include those associated with risks to: the learners e.g., (e.g. use of real defibrillators, needle stick injuries); simulation staff (e.g. chemical injuries, musculoskeletal injuries from moving heavy equipment); and patients (e.g. accidental administration of fake or outdated drugs, use of medical devices that are only appropriate for simulation use); and the organisation (e.g. reputational damage as a result of an adverse event). We have found that these safety risks may not always be recognised by simulationists. Therefore, the aim of this workshop is to highlight the range of potential risks associated with simulation-based education, and provide approaches for how simulation organisations can identify and mitigate these risks.

Intended Learning Outcomes

After attending this workshop, participants will be able to:

- identify the safety risks associated with carrying out healthcare simulation in their organisation; and
- mitigate these safety risks in their organisations.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Presentation 1. Short introductory presentation on safety risks in healthcare simulation

Small group activity 1. Small group activity in which the participants identify and discuss risks to their learners, staff, patients, and organisation.

Each group shares findings with everyone

Presentation 2. Short presentation on the tools and techniques we have used to mitigate risks.

Short group activity 2. Application of the tools and techniques discussed outlined in the presentation to the risks identified in small group activity 1.

Each group shares findings with everyone

Wrap up.

Educational methods: Interaction and Group Dynamics

Small group discussion and short presentations

Expected impact

A greater appreciation of the potential risks of simulation, and how they can be proactively mitigated.

Target audience

Simulation faculty, simulation technicians, simulation centre directors

Level: introductory/ intermediate/ advanced

intermediate or advanced

Maximum number of participants

25

Keywords

Safety; risks; simulation-based education

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Projector, computer, white boards and pens, tables for group work.



SOCIETY FOR
SIMULATION IN EUROPE

The SIM-PATH: From the needs to the simulation design

Format: Workshop

Topic: Curriculum Development and Assessment

Authors

Pedro Cartaxo Cintra	Hospital Clínic de Barcelona
Munt Garcia Font	Universitat de Barcelona
Nelson López Esquivel	Universidad del Pacífico
Miguel Fernández Santana	Hospital Universitari de Bellvitge
Rocío Ponce Muñoz	Universitat de Barcelona
Iago Enjo Perez	Universitat de Barcelona

Introduction & Aims

Simulation has been widely implemented due to its impact on training in healthcare educational programs. Despite its benefits, we should consider that simulation requires a lot of resources and it is not always the key to all educational problems: we should develop a criteria that enhances the use of simulation in an effective way.

Intended Learning Outcomes

- Understand the impact of simulation and its limitations.
- Create a criteria to support the decision-making process to assess if simulation is the best option to cover an educational need: from Miller's perspective.
- Create a criteria to support the escalation of complexity, in order to acquire a competency through simulation: using different approaches (SimZones, Feedback, Debriefing, Rapid Cycle Deliberate Practice).
- Understand the impact of clinical debriefing as a tool to maintain group competency.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- 10 min - Introduction: Introduction of facilitators and methodology
- 10min - How to decide?: The UB guidance: When and how to apply simulation?
- 60 min - Group Work (4 groups):
 - 20 min - Analyse and establish a plan from 8 different problems
 - 20 min - Sharing conclusions
 - 10 min - Closing and transference

Educational methods: Interaction and Group Dynamics

Practical workshop with a participative problem-based learning approach, led by experts.

Expected impact

By the end of the workshops, participants will be able to: determine when simulation is needed or not; understand how to escalate and use different approaches of simulation, according to the participants' competencies.

Target audience

Educators and professionals who design educational programs and simulation cases

Level: introductory/ intermediate/ advanced

From introductory to advanced

Maximum number of participants

36

Keywords

SimZones, RCDP, Course Development, Curriculum, Clinical Debriefing

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Computer, projector, 4 tables, chairs.



SOCIETY FOR
SIMULATION IN EUROPE

The art of debriefing

Format: Workshop

Topic: Debriefing

Authors

Neil McGowan	NHS Greater Glasgow and Clyde
Ciara King	NHS Greater Glasgow and Clyde
Stephen Paterson	NHS Greater Glasgow and Clyde
Prashant Kumar	NHS Greater Glasgow and Clyde

Introduction & Aims

Whilst there are many "recipes" of how to debrief effectively, effective debriefing could be considered an art form. To become proficient in this art, there are key pillars of understanding required to allow facilitators to "think on their feet" and create an environment in which learning can be maximised.

The aim of this workshop is to provide a scaffold on which facilitators can build their skills in debriefing.

Intended Learning Outcomes

- Describe underlying principles of debriefing■
- Discuss effective facilitation of reflective learning within debriefs■■
- Create structures for introducing and discussing non-technical skills

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Groups of 6-8 around a table, maximum of 6 groups

Introductions / icebreaker within groups (5 minutes)

Group discussion 1: "What is debriefing. What are the key elements needed to maximise learning?". 5 minutes. Groups to write answers then representative to present for facilitated discussion (20 minutes).

Presented content (5 minutes): Concepts of adult learning theory applied to simulation debriefing.

Group discussion 2. "How do I invisibly steer a conversation to achieve a non-technical skill learning outcome?". Group discussion 10 minutes. Groups will be given an "agenda" and asked how this can be used to discuss specific non-technical skill. The following facilitated discussion will concentrate on using key words/phrases to launch NTS discussion. 20 minutes

Group discussion 3: "Where can it go wrong?" 10 minutes. Groups to discuss pitfalls and create solutions. Report back to larger group and facilitated discussion. 15 minutes.

Educational methods: Interaction and Group Dynamics

Group discussion and facilitated feedback. Relies on high degree of interactivity.

Expected impact

Participants will develop of internal "mind maps" of how to ask questions to get to intended learning outcomes

Target audience

All simulation educators involved in debriefing, from any discipline.

Level: introductory/ intermediate/ advanced

Intermediate and advanced

Maximum number of participants

36

Keywords

Debriefing, non-technical skills

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Large space. Will require 6 tables, each with space for 6 participants per table. Projector / screen. Flipchart paper and pens per table.



SOCIETY FOR
SIMULATION IN EUROPE

The statues of cognitive and social skills – A psychodrama-inspired workshop

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Peter Dieckmann	Copenhagen Academy for Medical Education and Simulation (CAMES)
Une Stømer	University of Stavanger
Cecilia Holsbo	Copenhagen Academy for Medical Education and Simulation (CAMES)
Pier Luigi Ingrassia	Università degli Studi del Piemonte Orientale
Ulrich Strauch	University of Maastricht

Introduction & Aims

Cognitive and social skills are needed to apply healthcare knowledge and skills in the messy world of actual patient care. But to understand the underlying principles to a degree that they can guide perception, processing, and action can be challenging and often there is only a superficial understanding of the words used. Therefore, the workshop draws on art and psychodrama to make the concepts underlying the words easier to experience. By applying situation awareness, decision making, teamwork, leadership, and task management outside of their usual field of application, participants can improve their understanding of these concepts. The workshop involves the creation of statues with and by participants representing key concepts.

Intended Learning Outcomes

- Form an improved understanding of cognitive and social skills, drawing on embodied learning
- Discuss advantages and disadvantages of the method for learning around cognitive and social skills
- Discuss the relevance of embodied learning

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

15 min Intro of the faculty and the theoretical concepts of cognitive and social skills, statues work, and embodied learning

05 min Observation of a video showing a healthcare situation

25 min Building of the statues in five small groups. In each group, participants reflect upon how one of the categories of cognitive and social skills (e.g. teamwork) relates to the video. They then use the people in the group and potential other material available in the room (e.g. chairs) to build a (moving) statue that represents this relationship. The discussion of how the statue relates to the principle is a core in the learning dynamics in this concept

30 min Each group presents their statue to the rest of the group and discusses the relationship between statue and concept

15 min Concluding discussion

Educational methods: Interaction and Group Dynamics

Presentation, Statue work, Group discussion

Expected impact

Participants will have an improved and more embodied understanding of the concept they worked with actively, and that they observed from the other groups. They will be better in building the concept into scenarios, spotting the concept while the scenario is running, and also while discussing it in the debriefing.

Target audience

Simulation facilitators, Scenario and Course Designers

Level: introductory/ intermediate/ advanced

Intermediate and Advanced

Maximum number of participants

50

Keywords

Cognitive and Social Skills, psychodrama, faculty development, debriefing

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

projector, a room with flexible furniture and empty space



SOCIETY FOR
SIMULATION IN EUROPE

This is how we roll: Achieving sustainable organisational integration of simulation

Format: Workshop

Topic: Simulation Management and Administration

Authors

Elsa Søyland

Sigrun Anna Qvindesland

Une Elisabeth Stømer

Pål Andre Hegland

Rebecca Szabo

David Grant

SAFER

Stavanger University Hospital/RegSimVest/InterRegSim
Norway

Stavanger University Hospital/InterRegSim Norway

Førde Hospital/RegSimVest/InterRegSim Norway

The Royal Women's Hospital & The University of
Melbourne

University of Bristol Medical School

Introduction & Aims

Simulation-based learning and translational simulation can provide improved quality, patient safety, clinical competency, systems and general value to an organisation. Simulationists need to be conscious of how to strategically collaborate within their organisations to intergrade simulation methods into their workspaces.

Aim: Increase awareness of important factors for implementing simulation into your organisation in a sustainable manner.

Intended Learning Outcomes

By the end of this session participants will:

1. Exchange successful experiences and ideas for implementing simulation in a sustainable manner
2. Become more aware of stakeholder perspectives for successful implementation of simulation that gives value to your organization
3. Work with 1-2 frameworks relevant to sustainable implementation of simulation in an organisation

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Time (mins): Activity

5 Welcome & Introduce workshop authors

10 Interactive group introduction of participants

10 Intro & Aims & Learning Objectives presented

10 Quick intro of 1-2 frameworks for organisational implementation

25 Facilitated group work based on a request from a CEO – produce strategic actions that increase sustainable integration of simulation in an organisation: share experiences, challenges & solutions; create a “top 5 action list” to succeed with integration

25 Facilitated discussion in plenum of group work lists: Create collective mega action list from all groups

- 5 Show milestones for implementation from our organisations
- 5 Summarise and bid adieu

Educational methods: Interaction and Group Dynamics

- Interactive sociometry introduction
- Presentation of implementation frameworks
- Facilitated group work – eliciting experiences, challenges, successful actions and activities, co-producing a “top 5 action list” in each group
- Collecting and discussing each group’s “top 5 action lists” in plenum
- Creating a collective mega action list from workshop, disseminating to the participants
- Plenum summary

Expected impact

Participants will be inspired and better prepared to return to their organisations and strategically work within their work systems to integrate sustainable simulation

Target audience

Colleagues working on how to integrate simulation into the normal way their health care organisations run

Level: introductory/ intermediate/ advanced

All

Maximum number of participants

42 participants (1 faculty member: 7 participants in a group)

Keywords

Implementation, integration, organisation, simulation-based learning, value

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Projector & big screen

Wifi

Pens & Paper

Juicy marker pens & Flipcharts



SOCIETY FOR
SIMULATION IN EUROPE

Tips for the design, delivery and evaluation of an Inter-Professional Simulation Course

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Dr Catriona Neil

NHS Lanarkshire and NHS Greater Glasgow and Clyde

Dr Daniel Slack

NHS Lanarkshire and NHS Greater Glasgow and Clyde

Catherine Paton

NHS Lanarkshire

Introduction & Aims

Interprofessional simulation is an increasing focus in health-professional education. It allows undergraduate students to prepare for clinical practice, where decisions are regularly made within a multiprofessional team and postgraduate trainees to develop and enhance their skills.

We designed and developed a novel immersive team based simulation course focusing on interprofessional clinical reasoning for undergraduate students and pharmacy trainees. This course brought together students and faculty from medical, nursing and allied health professional backgrounds across the West of Scotland.

Faculty were involved in the development and pre course preparation. Within the course, students worked together as a team in a simulated acute medical receiving ward. Following the simulation, all students participate in a team debrief, co-facilitated by faculty from different professional backgrounds.

The aim of this workshop is to provide participants with the information required to develop, run and evaluate an interprofessional simulation course. This includes the background to interprofessional simulation, effective course design, involvement and preparation of facilitators, delivery including debrief methods and evaluation. Our personal insights and tips gained from our experiences allows others to design, improve or expand their interprofessional simulation courses.

Intended Learning Outcomes

At the end of this seminar participants will be able to:

- Design an interprofessional immersive simulation course with an understanding of optimising the input of interprofessional faculty.
- Give examples of difficulties which might occur for students and faculty and examples of how to overcome this.
- Describe different debriefing approaches which can be considered for use within an interprofessional simulation course.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Following introductions, we will start with group questions:

-How would you go about designing the course? What would be the main steps involved?

-What would be your concerns?

Feedback from the groups allows us to tailor the workshop.

Short power point presentation covering the design, delivery and evaluation of interprofessional simulation drawing on our personal experiences.

Group discussion on useful topics such as how to deal with potential issues that arise specific to interprofessional education from both a participant and faculty perspective. Each group will be give an issue and have to decide how to manage this before feeding back.

Educational methods: Interaction and Group Dynamics

PowerPoint Presentation
Interactive Polling/WordCloud
Group Discussion

Expected impact

We expect that the impact of this workshop is to give people the skills to either create or think about developing existing courses for IPL and give them the confidence dealing with some of the common issues which can arise.

Target audience

This workshop is aimed at simulation practitioners from all healthcare backgrounds, particularly those who run, or wish to run, interprofessional courses, or wish to expand existing courses.

Level: introductory/ intermediate/ advanced

Introductory/Intermediate

Maximum number of participants

50

Keywords

Inter-professional simulation, IPL

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

This session would require a screen and equipment for a Power Point presentation. Ideally, the audience should be able to arrange themselves in groups to allow group activities and discussion.



SOCIETY FOR
SIMULATION IN EUROPE

Translating Science to Debriefing and Faculty Development – Different approaches of Human Behaviour Observations

Format: Workshop

Topic: Debriefing

Authors

Julia Seelandt	University Hospital Zürich
Michaela Kolbe	University Hospital Zürich
Jenny W. Rudolph	Harvard Medical School, Massachusetts General Hospital
Bastian Grande	University Hospital Zurich

Introduction & Aims

Behavioral observation is the method of choice for studying team processes and interactions. It allows assessing behaviors and communication as they happen and provides a measurement for not readily apparent team phenomena or phenomena that only become apparent over time (e.g. patterns). People can observe behaviour using videos or during direct, on-site observations applying techniques such as coding systems or behavioral marker systems. The debriefing community has developed different tools and coding schemes (e.g. DE-CODE: A Coding Scheme for Assessing Debriefing Interactions; Debriefing Assessment for Simulation in Healthcare (DASH); The Observational Structured Assessment of Debriefing Tool (OSAD)) for assessing debriefing interactions and the quality of debriefings. During this session, participants will gain an overview of challenges and advantages of observing and coding debriefings. Subsequently, we will have a closer look at DE-CODE, DASH and OSAD and participants use these system for coding debriefing interactions.

Intended Learning Outcomes

After this session, participants will be able (1) to explain why behaviour observation during debriefings matters, (2) to identify different approaches to observing teamwork behaviour (i.e., rating such as in DASH and OSAD and coding such as in De-CODE), and to see through the eyes of the instrument by practicing observing ("frame of reference training"), (3) to reflect on the advantages and disadvantages of different approaches and (4) to develop a rubric for fitting the debriefing behaviour observation tool to their objectives.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- 00-10 min: Introductions, session overview, ground rules
- 10-25 min: Overview of behavioral observations: principles, methodologies
- 25-40 min: Introduction DASH and OSAD and exercise applying DASH and OSAD using a debriefing video
- 40-45 min: Sharing experiences
- 45-65 min: Introduction DE-CODE and exercise applying DE-CODE using a debriefing video
- 65-80 min: Discussion of results
- 80-90 Reflection, take-aways

Educational methods: Interaction and Group Dynamics

The session will include a range of educational methods including:

- Short interactive didactic sessions
- Small group work: behaviour observation based on videos
- Interactive group discussion
- Participants will perform observations and coding of a videotaped debriefing to experience the advantages to code debriefings.

Expected impact

After this session, workshop participants will see the potential for behavioral observations in healthcare simulation as well as in healthcare simulation research and how they can use it, e.g. for targeting faculty development. Additionally, they will identify advantages, challenges and limitations of observing debriefings. Participants will have an idea about bracketing key behaviours to be coded by an instrument and about how to acquire rating skills at the level of reliability and consistency required for trustworthy and credible peer feedback.

Target audience

Healthcare simulation researchers and practitioners seeking to learn about the benefit of observing and coding debriefing interactions.

Level: introductory/ intermediate/ advanced

Intermediate/advanced

Maximum number of participants

25

Keywords

debriefing behaviour observation tool, coding debriefing interactions, DE-CODE, DASH, OSAD

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

LCD projector

Speaker

Flipchart



SOCIETY FOR
SIMULATION IN EUROPE

Using a Non-Technical Skills observer and rating tool in ICU simulation (team)training and education

Format: Workshop

Topic: Interprofessional / Team Education and Training

Authors

Albert Klein Ikink	Consultant/Trainer Simulation Based Education
Roelie Sitepu	Consultant/Trainer Simulation Based Education
Peter Alting	Teacher/Trainer Simulation Based Education
Peter Dieperink	MD
Marije Smit	MD PhD

Introduction & Aims

Non-technical skills (NTS) are an essential part of team performance in an acute situation in the Intensive Care. Training of these skills in a simulated setting may improve team performance. Simulation most commonly occurs in small groups where not everyone can actively take part in the scenario. The aim of this workshop is to illustrate how a NTS observer tool can promote involvement of observers in simulation training and raise awareness and recognition of NTS behaviors. The audience will be shown a video of an interdisciplinary team training in a simulated scenario and asked to observe and rate NTS behaviors in situational awareness, decision-making, leadership, or communication skills according to our NTS observation and rating tool.

After the video a discussion of the observations and pros and cons of observation tools in individual and team learning will take place in small groups.

Intended Learning Outcomes

After this session, you:

- Can apply and use our NTS observer and rating tool
- Can instruct observers how to use a NTS observer and rating tool
- Will know how to apply this tool in a learner's portfolio
- Will know some pros and cons of observation tools in individual and team learning.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

1. (15 min) Introduction faculty and workshop:
Explanation of our team training program for ICU staff and pre-graduate ICU nurses
Short introduction of our Team Resource Management quadrant
Introduction of our NTS observer and rating tool
2. (10 min) Each group of participants is requested to observe NTS behaviors in the video with our NTS observation and rating tool
3. (10 min) Video of a simulated team training
4. (30 min) Group discussion of observations and pros and cons of observation tools in individual and team learning.
5. (15 min) Plenary discussion and Q and A
6. (10 min) presentation NTS tools in a student portfolio

7. Closure

Educational methods: Interaction and Group Dynamics

- Presentation of a tool
- Observation video of an interdisciplinary team training in a simulated scenario.
- Instruction of an observer tool
- Small group discussions about pros and cons of our NTS observer and rating tool.

Expected impact

Workshop illustrating the benefits of a NTS observer and rating tool during simulation training and into a student portfolio.

Target audience

Simulation educators, trainers, teachers

Level: introductory/ intermediate/ advanced

all

Maximum number of participants

40

Keywords

NTS, observer tool, rating, portfolio, peer feedback, teamtraining

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Equipment to show video (including audio) on a large screen
tables (6) and chairs to work in small groups



SOCIETY FOR
SIMULATION IN EUROPE

Using a triangular approach to post-simulation debriefing

Format: Workshop

Topic: Debriefing

Authors

Clare Hawker	Health Education and Improvement Wales
Bridie Jones	Health Education and Improvement Wales
Suman Mitra	Health Education and Improvement Wales
Cristina Diaz-Navarro	Health Education and Improvement Wales
Sara-Catrin Cook	Health Education and Improvement Wales
Jody Stafford	Cardiff and the Vale University Health Board

Introduction & Aims

Debriefing is crucial to simulation, offering the opportunity for meaningful exchange with participants by providing genuine reflection and feedback¹. It is classified as the cornerstone of successful simulation in improving performance and promoting learning. There is an abundance of debriefing models in the literature which can be applied². A framework was developed in response to calls for a standardised, national approach to debriefing in Wales. The framework follows a triangular approach which features agreed principles, recommended strategies based on current literature, and a four step structure which includes a chronological review of the scenario, and iterative Description, Analysis and Application (DAA) cycles. It was produced in collaboration with multiprofessional experts and has been peer reviewed and tested by the Welsh simulation community. The triangular approach provides a comprehensive and easy to follow framework to guide and support the debriefer.

The aim of this workshop will be to introduce delegates to a novel approach to post-simulation debriefing, providing the opportunity to apply it in practice.

Intended Learning Outcomes

- Identify the components of a triangular approach to post-simulation debriefing
- Apply a triangular approach to the practice of post-simulation debriefing
- Discuss the merits of a triangular approach to post-simulation debriefing

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Delegates will initially be provided with an overview and explanation of the triangular approach to post-simulation debriefing and how it has evolved from existing debriefing models and frameworks. This will be followed by practical application of the triangular approach in small groups with experts at hand to support and facilitate this activity. The session will end with meta-debriefing.

Educational methods: Interaction and Group Dynamics

The workshop will encourage experiential learning 3 allowing practice and critical reflection upon utilising the triangular approach to post-simulation debriefing.

Expected impact

To appreciate a different approach to post-simulation debriefing which can be easily applied as a framework to enhance debriefing practice.

Target audience

All healthcare professionals who are actively involved in the delivery of simulation-based education.

Level: introductory/ intermediate/ advanced

This is an intermediate/advanced level workshop aimed at delegates who have experience of debriefing and/or are experienced de-briefers.

Maximum number of participants

20-25 delegates

Keywords

Debriefing, post-simulation debriefing, debriefing framework

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

AV resources (computer, screen), flipchart or a SMART screen and a room to enable small group work and discussion will be required.



SOCIETY FOR
SIMULATION IN EUROPE

What's your listening style? Adapt listening for productive conversations.

Format: Workshop

Topic: Debriefing

Authors

Laura Rock

Harvard Medical School, Beth Israel Deaconess Medical Center, Center for Medical Simulation

Jenny Rudolph

Center for Medical Simulation, Harvard Medical School, Massachusetts General Hospital

Introduction & Aims

Educators, clinicians, and leaders know that listening is important, but may not know how to listen effectively. We have habitual listening styles which may be sabotaging our goals. We may have received positive feedback for being efficient, funny, articulate, or supportive, but the default style being used may preclude applying different listening styles to achieve other goals. Learning to listen well begins with understanding what type of listener you are. We will discuss four distinct listening styles: Analytical, relational, critical, and task-focused. Participants will complete a "listening quiz" to identify their own listening styles. Beyond specific styles of listening, we often insert ourselves into a speaker's narrative with good intentions, but may undermine communication when we redirect the focus. Recognizing when to shift out of our habitual styles and consciously apply alternative styles of listening and being more conscious of the focus of attention will promote more effective and meaningful interactions.

Intended Learning Outcomes

1. Identify and describe the different styles of listening and their impact.
2. Complete a listening quiz to determine "default" style of listening.
3. Apply strategies to improve the listening process in order to promote more effective listening, achieve understanding, and meet the needs of the speaker.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

This is an engaging, interactive workshop. The presented and interactive content is merged. There is no long lecture in this workshop, all didactics will be interactive and intermixed with opportunities to practice and reflect in pairs and as a group.

Introduction (3 minutes). Overview session plan, clarify expectations and promote psychological safety.

Opening activity (7 minutes). A pairs listening exercise to engage participants and provide an experience to analyze in the next section.

What is your listening style? (12 minutes). Participants will take a listening quiz followed by detailed descriptions of the main listening styles and the implications of employing each style, reflecting on how it is experienced by speaker and listener. Didactic teaching, self-assessment and reflection, debriefing.

The focus of listening. Brief interactive didactic teaching. (3 minutes)

Practice listening styles and focus of attention (10 minutes). Participants will have an opportunity to practice different listening styles when given a prompt and will practice and experience shifting the focus of listening to oneself, to the speaker, and maintaining a shared focus of attention.

Audience response, role play with feedback, self-check, reflection.

Listening and responding to emotion (10 minutes). When emotion is present we tend to respond with reassurance or information. Those responses prevent the listener from feeling heard and miss an opportunity to build trust and to better understand underlying values and concerns. Participants will learn and practice responding to emotion with a simple conversational tool and experience the impact of different responses.

Reflections on listening styles and their impact (10 minutes). Discussion of participants' observation of their own urge to interrupt, comment, shift the focus to themselves and how it felt to shift the style and the focus and to incorporate emotion response in listening. Discuss strategies for developing this skill set.

Educational methods: Interaction and Group Dynamics

Interactive didactic teaching

Practice and reflection in pairs

Self-assessment and self-reflection

Group practice with prompts and feedback

Group discussion and debriefing

Expected impact

Participants will gain insight into their own listening styles and how they shape conversations. They will learn tools to select listening styles to meet the needs of the speaker and make conversations more effective.

Target audience

Educators, clinicians, debriefers, leaders of all professions

Level: introductory/ intermediate/ advanced

Introductory to advanced

Maximum number of participants

60

Keywords

Communication, teamwork, debriefing

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

microphones, projector for slides

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SOCIETY FOR
SIMULATION IN EUROPE

Who are you and who are we? Systemic concepts, Social GRACES and their links with inclusivity within simulation.

Format: Workshop

Topic: Culture, Wellbeing, Equity, Diversity, Inclusivity

Authors

Henna Qureshi

The Tavistock and Portman NHS Foundation Trust

Ranjev Kainth

Guy's & St Thomas' NHS Foundation Trust

Introduction & Aims

Aims:

- 1: To explore diversity in a manner which feels psychologically safe and inclusive.
2. To introduce systemic ideas, including the Social GRACES.
3. To think about how these ideas can be utilised within SBE.

In this workshop we will think together about who we are, how this affects others around us and how this can impact our work together in simulation. We will focus on two main areas when thinking about who we are: systemic concepts (thinking about the various systems we are part of and how they interact) and Social GRACES [3] (things like protected characteristics and beliefs). We will highlight their relevance in healthcare for both patients and healthcare professionals. Utilising these concepts, we will then discuss how we can be more inclusive in simulation based education (SBE). This includes in course design, simulation scenario setup and execution, and debriefing.

This is an area which has not been explored extensively in the literature. This is interesting as there are close links between SBE and Human Factors work. Human Factors are defined as the 'environmental, organisational and job factors, and human and individual characteristics which influence behaviour at work in a way which can affect health and safety [1]. In spite of this definition, human factors work does not include thinking on protected characteristics and beliefs. The fact there is little published in the simulation literature to address unconscious bias [2], is perhaps therefore not so surprising. Vora and colleagues define unconscious bias as 'unconscious attitudes toward a person, group, or idea, which often result in discriminatory behaviours and can often differ from explicit or expressed beliefs.'

The Social GRACES were developed to remember aspects of difference, which contribute to the construction of social realities and a person's experience. 'GRACES' is an acronym of these differences (gender, geography race, religion, age, ability, appearance, class, culture, ethnicity, education, employment, sexuality, sexual orientation and spirituality). They sit on continuums between visible-invisible and voice-unvoiced [3].

We propose that thinking systemically, including the use of the Social GRACES, will provide a framework in which SBE can actively engage with difference and inclusivity. We are excited for the opportunity to think about this novel area together, and to help people to consider some of the differences between individuals which impact on both staff and patients.

1. Health and Safety Executive. Reducing error and influencing behaviour, Norwich: The Stationery Office; 1999.
2. Vora S, Dahlen B, Adler M, O Kessler D, Jones VF, Kimble S, Calhoun A, Recommendations and Guidelines for the Use of Simulation to Address Structural Racism and Implicit Bias. *Simul Healthc*, 2021, 16(4), pp. 275-284.
3. Burnham J. Developments in Social GRRRAAACCEEESSS: visible–invisible and voiced–unvoiced. In: I. Krause, ed.

Culture and reflexivity in systemic psychotherapy. Mutual perspectives. London: Karnac Books; 2011.

Intended Learning Outcomes

1. To identify the systems that you are a part of and how they interact
2. To identify the Social GRACES and their potential impact on learners and patients
3. To use systemic ideas to suggest changes in the practice of SBE to make it more inclusive

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

Total duration: 4 hours (however, content can be steam-lined to fit into a 1.5hr or 2 hr workshop)

Duration/mins, Content

- 5 - Introduction (presented)
- 20 - Icebreaker (interactive)
- 10 - Individual: What systems are you a part of? +Feedback (individual task, then interactive)
- 30 - Pairs: Ask questions about their systems. +Feedback (task in pairs, then interactive)
- 10 - Systemic thinking and key concepts (presented)
- 5 - Family therapy and the reflecting team (presented)
- 45 - Break – can be spread in the workshop
- 10 - Group: Where am I from? (interactive)
- 5 - Our differences matter. Session Principles (presented)
- 10 - Differences discussed in simulation (presented)
- 5 - Why does this matter (presented)
- 5 - Social GRACES (presented)
- 15 - Individual: Write down your Social Graces +Feedback (individual task, then interactive)
- 15 - Group discussion: application to practice in SBE (interactive)
- 20 - Pairs: scenario review +Feedback (interactive)
- 5 - Reflecting team (presented)
- 10 - Feedback & close

Educational methods: Interaction and Group Dynamics

Didactic, individual tasks, tasks in pairs, group discussion

Expected impact

- To experience talking about diversity and inclusion in a space where psychological safety has been centered
- For participants to feel empowered to think and talk about inclusivity more, in and out of work

Target audience

- All involved in designing and delivering SBE, including education faculty, administrators and technology staff. This will be of particular interest to those considering how to evaluate and implement concepts of inclusivity in their place of work.
- We welcome participants beyond education faculty, as we think others e.g. administrative staff and technology staff are likely to have different, useful perspectives.

Level: introductory/ intermediate/ advanced

Introductory

Maximum number of participants

20

Keywords

Inclusion Diversity Systemic

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

Computer, screen, pointer, tables and chairs for participants, flipchart with paper and pens.



SOCIETY FOR
SIMULATION IN EUROPE

Workshop provides educators a framework to train Standardised Patients on delivering learner centred feedback.

Format: Workshop

Topic: Quality assurance, Faculty development and Program evaluation

Authors

Stella Major	Weill Cornell Medicine - Qatar
Christina Bernardo	Weill Cornell Medicine - Qatar
Joshua Vognsen	Weill Cornell Medicine - Qatar
Rudy Bahri	Weill Cornell Medicine - Qatar

Introduction & Aims

Interpersonal and communication skills are a major competency within the patient care and physicianship theme in the medical curriculum. In one-on-one patient-physician encounters, learners interact with role portraying standardised patients (SP). After completing a timed encounter, the learner and SP engage in a one-to-one feedback conversation which is learner centred and which focuses on the learner's performance. For the feedback conversation to be effective, the SP must be trained to deliver feedback in a structured learner-centred manner. The elements of the structured feedback framework were developed blending guidance taken from literature on debriefing with good judgement (1) and SP and tutor feedback (2) are: (a) Welcoming back and assessing learner reactions, (b) Establishing learner's agenda, (c) Discussion (i)state observations, (ii) explain impact on the patient, (iii) invite reflection and (d) wrap-up. This corresponds with Association of Standardized Patient Educators Standards of Best Practice (ASPE SOBP) domain 3.3, training for feedback (3).

Reference

1. Rudolph JW, Simon R, Rivard P, Dufresne RL, Raemer DB. Debriefing with good judgment: combining rigorous feedback with genuine inquiry. *Anesthesiol Clin*. 2007 Jun;25(2):361-76. doi: 10.1016/j.anclin.2007.03.007. PMID: 17574196.
2. Nestel D, Clark S, Tabak D, Ashwell V, Muir E, Paraskevas P, Higham J. Defining responsibilities of simulated patients in medical education. *Simul Healthc*. 2010 Jun;5(3):161-8. doi: 10.1097/SIH.0b013e3181de1cb6. PMID: 20651478.
3. Lewis, K.L., Bohnert, C.A., Gammon, W.L. et al. The Association of Standardized Patient Educators (ASPE) Standards of Best Practice (SOBP). *Adv Simul* 2, 10 (2017)

Intended Learning Outcomes

- Learning objectives
 - o Describe human role players as a simulation modality.
 - o Familiarize participants with Association of Standardized Patient Educators (ASPE) standards of best practice
 - o Familiarize participants with a structured feedback framework

- o Provide role-plays to practice the elements and micro-elements of structured feedback.

Session Description: how Intended Learning Outcomes will be reached, detailed sessions timeline clearly describing learner activity

- Session description (planned activities)
 - o Pre-workshop survey of participants self-assessed knowledge and experience based on workshop learning objectives (Qualtrics)
 - o Brief presentation introducing the content of the workshop
 - o Role play demonstration by workshop facilitators modeling the feedback elements
 - o Break-out session, participants role play in pairs (SP - Learner) using scripts provided by facilitator
 - o Wrap-up
 - o Post-workshop survey in Qualtrics

Educational methods: Interaction and Group Dynamics

- Educational methods
 - o Pre & post workshop surveys (anonymous/voluntary)
 - o Ten minutes introductory lecture
 - o Role play demonstration
 - o Instructions on pair and share role play activity. Each participant is once a learner and once the SP. Prompts are provided for the SP to build their observations and its impact on them as the patient.
 - o Group reflections

Expected impact

- Expected impact
 - o Increased awareness of the ASPE SOBP as guidance for human role plays based activities.
 - o Discussions around experience with training SPs using structured feedback elements & reflections on plus/delta and sharing of experiences based on prior practice.
 - o Networking

Target audience

- o Simulation educators who either already work with SPs or are planning to do SP training in the future.

Level: introductory/ intermediate/ advanced

- o Introductory to intermediate level

Maximum number of participants

20

Keywords

SP training, Feedback, Medical Students, ASPE SOBP

Equipment Requests: Please consider space required, presentation materials required eg flipchart, projector etc

- o Slide Projector for PPT
- o Open space for semi-circular setting of chairs only, with enough space for participants to split up in pairs and do role-plays.

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